



## Case study

# American Family Field™ Milwaukee, Wisconsin

Johnson Controls smart building solutions deliver a comfortable, safe and sustainable environment at American Family Field™

# Maximizing fan experience, ballpark performance and efficiency



April 6, 2001, marked the first opening day game the Milwaukee Brewers™ played in their new home ballpark, now known as American Family Field™, in Milwaukee, Wisconsin. The state-of-the-art ballpark is a landmark for the city and remains one of only seven MLB ballparks with a retractable roof. From design through construction, commissioning and ongoing daily operations since the venue opened, Johnson Controls has been working with the Milwaukee Brewers Baseball Club™ to deliver the best experience possible for fans while maximizing the performance and efficiency of the ballpark.

A comfortable experience for visitors regardless of the weather outside was a key reason the Brewers™ adopted American Family Field's™ signature fan-shaped convertible roof. The roof enables a climate-controlled environment that continues to be valuable for improving game

attendance; on average, the Brewers™ currently draw roughly one million more fans per year to American Family Field™ compared to the team's previous home venue, Milwaukee County Stadium. The roof also allows for more entertainment events to take place, which in turn increases the revenue used to field a winning team. This is particularly important in April and May when cold weather historically kept many fans away from the old open-air County Stadium, built in 1953.

The ballpark also offers numerous amenities, such as 65 club suites, X-Golf, 38 permanent concession stands, one of the largest scoreboards in MLB, a full-service brewery and restaurant, as well as casual dining options, and assorted spaces available year-round for meetings, parties and banquets. The improved amenities are complemented by sophisticated HVAC, lighting, fire alarm and security systems.

**“American Family Field™ is not only home to Brewers™ baseball but also to many other events ranging from small company outings to full-scale concerts. Johnson Controls has demonstrated great success in their ability to be flexible and adapt American Family Field™ to these functions, regardless of their scope and requirements.”**

Rick Schlesinger, President – Business Operations, Milwaukee Brewers™



### **American Family Field™ facts:**

- Seating capacity: **41,900**
- Club suites: **65**
- Field surface: **Natural grass**
- Building size: **1.2 million square feet**
- Roof span: **600 feet covering 8.5 acres**
- Roof height at peak:  
**275 feet above the playing field**

# The team behind the team

For Brewers™ management, the mission has always been to keep fans comfortable and safe at American Family Field™. A team of Johnson Controls technicians has been on board from the beginning under an operations and maintenance contract designed to help the Brewers™ administrative and operations staff manage the daily operation of the ballpark.

Johnson Controls continued goal is to help the Brewers™ deliver the best fan experience possible by putting the right processes and experienced people in place to drive improved efficiency and building performance, and enhanced sustainability.

The Johnson Controls facility operations and maintenance staff is responsible for repairing and maintaining nearly 350 pieces of HVAC equipment and scheduling the activity of various contractors who ensure structural maintenance for electrical, plumbing and other equipment in the ballpark and

outbuildings. Johnson Controls technicians are trained to open and close the retractable roof and must be present for all games and special events without exception.

Johnson Controls technicians manage the Stadium Operations Controls Center, where all systems are monitored and controlled. They also manage the electricians and technicians who troubleshoot and address lighting concerns during a game or event. The lighting system controls all lights in public areas, sports lights and parking lot lights and consists of 21 field controllers.

In addition, Johnson Controls maintains a computerized maintenance management system, which ensures work orders are addressed promptly and are properly recorded. Other duties include facility manager support, report generation, maintaining park signage and even assisting the Brewers™ with miscellaneous ballpark events.





## Ensuring fan comfort, efficiently

The Metasys® building automation system continues to be one of the major contributors to the comfort of fans as well as for energy savings. The Metasys® system monitors and controls the ballpark's HVAC equipment and some of the equipment in the club suites.

An important source of revenue for the Brewers™, club suites are expected to provide an environment that meets suite holders' unique comfort needs, so each suite's space is controlled individually by the Metasys® system. Metasys® also regulates the temperature beneath the roof, which covers the entire seating bowl.

The Brewers™ recently completed a second retro-commissioning of the 23-year-old ballpark with a goal of fine-tuning the facility's systems to ensure it's running optimally. Johnson Controls technicians employ their long-term knowledge of the ballpark's operating characteristics to ensure it continues to

run optimally. By identifying building anomalies early, technicians can use the Metasys® system to reduce or temporarily eliminate their effects, ensuring effective daily operations.

Scheduled start-up and shutdown of HVAC equipment ensures equipment runs only when needed to keep guests comfortable, and that it's shut down promptly when the event is over. Scheduling modifications in the Metasys® system occur frequently to support games, events or special occupancy issues throughout the entire year. Operating parameters are routinely reviewed and adjusted to ensure comfort and system efficiency, which results in less wasted energy and more satisfied players, fans, staff and management.

The Brewers™ typically hold the seating bowl temperature at 62°F, and temperatures remain uniform within about five degrees throughout the park.

With a \$500 million public funding plan in place for long-term renovations and improvements at American Family Field™, the Brewers™ will look for technology to help drive enhanced fan experiences, improved operational efficiency, and state-of-the-art ballpark security. Sports and entertainment venues around the globe are effectively implementing digital transformation strategies that include new

innovations such as AI-driven weapons detection and threat identification systems that can provide a more secure and frictionless entrance experience. Data-driven insights can improve operational outcomes that delight fans, optimize the environment, reduce energy use, manage traffic flow and more.





# How American Family Field™ keeps fans comfortable

American Family Field's™ most unique feature is its retractable roof. The fan-shaped roof includes 12,000 tons of structural steel and spans approximately 600 feet from home plate to the outfield track beam. The roof covers more than 8.5 acres and is comprised of seven panels (five of which are movable). The roof can open or close in 10 minutes with three of the movable roof panels stacking on the left side and two movable roof panels stacking on the right side of the ballpark.

The space beneath the convertible roof at American Family Field™ is as large by volume as nine indoor sports arenas. Keeping that space warm and comfortable is essential to the Milwaukee Brewers™ aim of boosting attendance, especially during the cooler months of April, May and September.

Heat for the seating bowl comes from 14 indirect gas-fired heaters located on the Terrace and Field levels that discharge warm air through ductwork and diffusers on those levels and on the Loge Level. During cold-weather games played under the roof, the heaters are activated at a predetermined hour before game-time — early enough to ensure fan comfort. Sensors in the gas-fired heating units monitor return air temperature; the Metasys® system then modulates the burner flames to maintain the desired temperature.

The air stays cooler on the playing field and in the outfield sections of seats, where outside air enters along the track beam at the base of the roof and through joints in the outfield wall, which like the roof can, be opened and closed. Natural convection occurs, as newly introduced warm air rises and cooler infiltrating air settles.

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