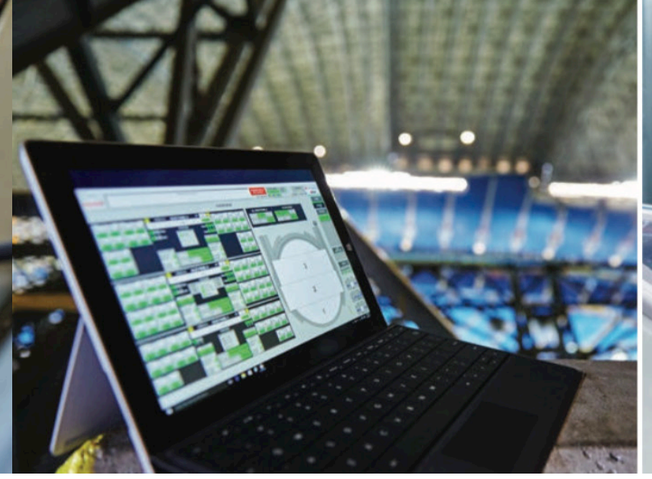
SPARKPOWER™

Case study:

ROGERS CENTRE

A massive retrofit to the many systems that open and close the expansive retractable roof, requiring significant upgrades to the infrastructure, including a new Operations Technology network and control system.



SOLUTION

New Electric, a Spark Power Company, which has effectively managed Rogers Centre's electrical requirements for everything from the roof and its power and control systems, to its concession stands and ATMs, lighting systems and the Blue Jays' locker rooms, for the past decade, agreed to update the roof's software and hardware.

The project included replacement of the 76 DC-motors with high-efficiency AC motors and VFD technology, as well as implementing a new state-of-the-art redundant Rockwell control system for the automated retraction and extension of the roof which pulls relevant data and ties in with weather stations and multiple cameras.

BENEFITS

- Aging system experienced prolonged opening and closing times and roof panels periodically slowed or stopped
- Reliability and downtime severely stressed management and staff
- Stand-alone, manual system made it difficult to troubleshoot and pinpoint the source of the various issues
- A single control system governed the 76 motors that moved the roof, which meant that if one motor had an issue, the complete system had to be shutdown
- Required highly specialized, third-party service technicians who tended to be out of the country when needed

BENEFITS

- The roof now opens and closes reliably at an optimum 20 minutes
- Management and staff has complete confidence in the roof and its systems
- The new automated systems pull data and create reports equipping managers with real time performance data to efficiently pin-point root cause issues
- Redundant control system mitigates the risk of critical failure
- Simplified operation through single operator one touch control
- Technology is easily maintained by 24/7 local support

PROJECT

At the Rogers Centre, fans, particularly the sports and entertainment facility's avid Blue Jays supporters, see the sky view above the open roof as an integral and much loved part of the overall experience.

As the world's first-ever, fully-retractable stadium roof aged over more than two decades, opening and closing of the roof faced increasing challenges. While management recognized the once leading-edge roof system it debuted in 1989 was now antiquated, a specific event inspired action. During a sold-out, high-profile game between the Boston Red Sox and the Toronto Blue Jays in July 2008, a single panel stuck, casting a massive shadow over the infield for the duration of the game.

"That certainly got management's attention and we started to develop a modernization plan for the new operating system and preformed structural repairs ahead of contracting New Electric to start the renovation." says Dave McCormick, Manager, Engineering, Toronto Blue Jays Baseball Club, Rogers Centre, Toronto. "We knew we'd had ongoing issues with reliable functionality for years although safety had never been a concern. I always equate it to this: Not many people are still driving a car they had 20 years ago."

Upfront, McCormick acknowledges the fact New Electric was not Rogers Centre's first choice for the project, simply because they lacked direct experience with massive retractable roofing systems. Yet after seeing New Electric's presentation and proposed project plans, Rogers Centre selected New Electric to lead the project.

"New Electric was the dark horse – they'd never done a roof like this before, but the fact they'd been up on the Rogers Centre roof with us whenever we'd had problems meant they'd lived through the agonies with us and were fully attuned to our real needs," says McCormick, who'd personally experienced New Electric's electrical expertise and deep dedication to customer service during the decade New Electric had met all of the Rogers Centre's electrical requirements. "As of now, New Electric, which delivered on my vision for our new roofing system, is a legitimate player in the retractable roof sector."

Only the most devoted fans of the Rogers' Centre's fully retractable roof would notice, but the roof now opens or closes in half the time. The speeds are faster, more consistent and the Rogers Centre' engineering and maintenance staff now have absolute faith in it.

"Previously, the roof system could be down for hours or days while we tried to identify and then rectify the problem – since the renovation – it's always fully functional," says McCormick. "If you're watching the roof, it's so quiet you won't know it's started moving."

To help Rogers Centre keep every fan dry, New Electric installed a rooftop weather station that tracks weather systems to predict when the rain or cold front will arrive and replaced the 76 existing DC-motors with high-efficiency AC motors and VFD technology.

Previously, the roof's opening and closing was completely dependent on the single system that ran all 76 DC motors. If a single motor failed the complete system experienced a shutdown. As result, an electrician had to be up on the roof for the duration of every event. Today, a regular building operator is able to independently shut down a motor with issues without interrupting the balance of the system.

In addition, a new state-of-the-art Rockwell control system automates the retraction and extension of the roof and pulls relevant data. A lone operator now initiates the entire process where previously more individuals were required.

CUSTOMER PROFILE: ROGERS CENTRE

Formerly known as the SkyDome, Rogers Centre is home to the Toronto Blue Jays and is a Toronto sports and entertainment landmark that has the world's first-ever fully retractable stadium roof.

- 11,000-tonne roof covers 8 acres (3.2 hectares)
- Hosts 3.5+ million guests annually
- Averages 200 event days, consisting of 50,000 seated guests

PROJECT (CONTINUED)

As well, 16 new cameras let McCormick and his team see exactly what's going on atop the roof in real time. Essentially, the cameras act as McCormick's windshield and provide him with the most important lines of sight – all from the convenience of his own office.

"Thanks to New Electric, we now have a state-of-the art, plug-and-play computer operating the roof and managing its performance for us," says McCormick. "If the computer detects an issue, mechanical, electrical, software or hardware, in seconds, it tells us where to go and what we need to do when we get there."

Unlike the previous control system, which was installed before cell phones existed, the new system is non-proprietary and familiar to virtually any technician. As McCormick explains it, at the time it was installed, there was nothing like it in the world and putting several people on the roof for every opening or closing was a basic, normal requirement.

"Today, one person initiates the opening and closing process with one touch. While much simpler, it's still a big piece of equipment to move. I can easily train technicians experienced with the roof to quickly operate the new system." says McCormick.

To maintain the new system's optimum performance, the Rogers Centre has contracted

regular preventive maintenance and reviews. In addition, McCormick and his team greatly appreciate the fact that New Electric can remotely access the system for troubleshooting and repairs when off-site.

"We want to keep our fabulous new system operating at its peak performance," says McCormick, who recognizes every new system will require component replacement and fine tuning. "The breakdowns and downtime have

been drastically reduced and we have peace of mind because we can quickly and easily troubleshoot it."

In his role as the Rogers Centre's Engineer, McCormick has handled multiple projects from exit lights to the concrete structure in his more than

14 years on the job. Updating the roof, the largest project ever in terms of budget, scale and time-line, was his least stress assignment.

"New Electric put the right people into the right positions at the right time," says McCormick. "They'd spent so much time on the Rogers Centre roof with me for over a decade, they felt my pain and knew exactly what I needed. Their project plans were solid proof that they'd really listened and understood the issues. This Rogers Centre/ New Electric project was crazy successful!"

TALK TO AN EXPERT

Choosing the right contractor can be stressful, time consuming and confusing. Spark Power recognizes the value of rapid response times, comprehensive project management, superior quality workmanship and a deep commitment to safety on every job site.

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