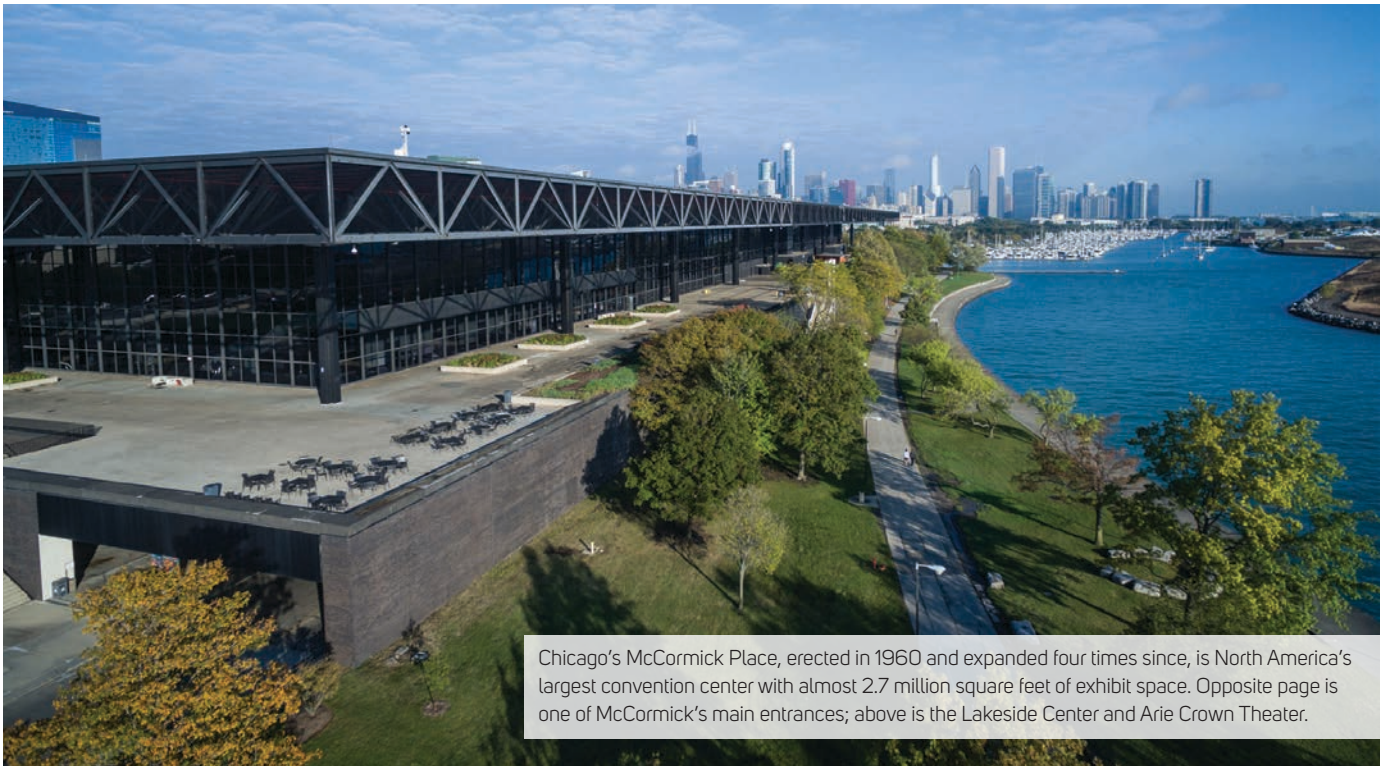
PROTECTING NORTH AMERICA'S **LARGEST CONVENTION CENTER**

Conventions are what Chicago's McCormick Place is known for, yet its new security solution shatters them. Here's an exposition of the complex's 17-month fully integrated video and access upgrade project involving thousands of custom macros. By Scott Goldfine

ANYONE WHO HAS attended this month's Global Security Expo (GSX, formerly ASIS Expo) or especially springtime's ISC West can attest to the borderline chaos associated with such massive tradeshows. Now imagine being in charge of security for such a vast and hectic event — now magnify that some tenfold. That is the daunting task of Security Systems Manager Frank Solano and Access Control Coordinator Brett Zelnio, key figures responsible for overseeing the security of North America's largest convention center and orchestrators of Chicago's McCormick Place new video surveillance and access control upgrade. Coincidentally that also happens to be where next year's GSX will touch down.

Just how large is McCormick Place? Drawing some 3 million visitors each year, the campus consists of four state-of-the-art buildings and is interconnected via pedestrian promenades and sky bridges with the new adjacent 10,000-seat Wintrust Arena and two huge four-star hotels. The grounds also include retail shops, restaurants, a park and more. Here are some statistics pulled from McCormick Place's website: 2.7 million square feet of exhibit halls; 170 meeting rooms; six ballrooms; assembly seating for 18,000; 4,249-seat Arie Crown Theater; three 300-seat theaters; and 5,800 parking spaces. Owned by the Metropolitan Pier and Exposition Authority (MPEA), a municipal corporation, clearly McCormick Place is a world unto itself.

Although sufficient for its time, it became increasingly apparent through the years and as the complex continued to expand that the viability of McCormick Place's security systems had run their course and an overhaul was necessary. Having studied and assessed today's advanced secu-



Chicago's McCormick Place, erected in 1960 and expanded four times since, is North America's largest convention center with almost 2.7 million square feet of exhibit space. Opposite page is one of McCormick's main entrances; above is the Lakeside Center and Arie Crown Theater.

rity products, Solano and Zelnio sought a solution that would enable them to streamline, integrate, scale and customize video, access and other systems in such a manner to not only optimize security and safety but also add significant operational efficiencies. The latter point would enable McCormick Place management to make the best use of its 400 employees (some 110 of whom are security personnel). From a business standpoint, the upgrade would also satisfy customers' inquiries and expectations that such a high-profile facility offers state-of-the-art security.

The enormous MPEA-funded project took more than a year to complete (and continues to some extent in an ongoing capacity). As the story unfolds, what's revealed are the numerous challenges presented by the building structures and architecture, as well as an intense scheduling regimen and the imperative of working around exhibitions that are often booked years ahead. Success hinged on seamless coordination, teamwork and innovation among the end user, security integrator, electrical contractor and other trades, and supportive vendors bringing leading-edge solutions.

Staging an Epic Production

After being green-lit in 2015, a request for proposals (RFP) was distributed. Among those throwing its hat into the ring to win the job was local integrator Videotec of Highland, Ind., a Chicago suburb. The company, which was founded in 1973, had learned of the RFP through the project's electrical contractor, Broadway Electric Inc. (BEI). The specification called for fully implementing a Genetec Security Center system with both video and access control integrations, including dynamic software controls that would require additional programming expertise for up to 4,000 custom macros.

Having satisfied thousands of customers through the years, in Videotec McCormick Place stakeholders were looking at a compelling integration firm boasting deep National Electrical Contractors Association (NECA) and International Brotherhood of Electrical Workers (IBEW) relationships, strong design-build capabilities, and outstanding installation and service technicians.

"We also pride ourselves on our software capabilities for implementing total security management solutions, heightened real-time awareness, and remote-service capabilities," says Videotec President Buddy Lee, who along with CEO Dave Runnells bought the company from its founder in 2001. "But most of all, we are proud of our long-term relationships with satisfied end users. We consider our end users partners rather than customers."

Through its more than four decades, Videotec had established an impressive track record of delivering complex solutions to commercial and industrial clientele in and around Chicago, a city that has some of the nation's most stringent electrical and life-safety codes. In the end, its experience, expertise, value and client-centric culture made a convincing case and landed Videotec as the McCormick Place security integrator of choice. A substantial amount of groundwork would be laid prior to the firm's boots arriving on the ground, however.

MPEA hired consultant company Dynamix and in concert with BEI and Solano and Zelnio generated the project's design and prints. That set the stage for Videotec to begin the installation in January 2017. It would take 17 months to complete.

No Communicaton Gaps

McCormick Place's stakeholders had very specific initial expectations that were somewhat modified as the project progressed. There were numerous discovery meetings involving MPEA and Videotec as well as other hired trades to discuss the project's details and complexities. Given the exacting design elements, scope and fluid environment, the collaboration and coordination of all parties had to be exceedingly tight and precise. Part of that

McCormick's access control and video systems are integrated to allow Emergency Operations Center staff instantaneous viewing of people as they enter, exit or otherwise engage with a door or entryway.

was also building into the plan allowances for unexpected obstacles or unforeseen wrinkles that invariably crop up in projects of this magnitude.

"We attended weekly meetings held by the MPEA for various agenda items with one of the most important being timelines and coordination," says Lee. "Scheduling was a challenge due to areas having been previously committed for customer use. It was a must for us to coordinate with all trades and the McCormick Place staff to ensure we would be able to turn over an area and have our work completed by each deadline."

Also playing a crucial role in helping the integrator and end user achieve their goals was the lead vendor, Genetec. The city of Chicago has standardized on the high-tech security specialist's platform for municipal facilities and the Office of Emergency Management Center. "Genetec's people are very good listeners, always looking for that feedback and what they can do to make things happen the way you would want them to. That is unusual and something special," says Zelnio.

Genetec's Security Center 5.5 software with Omnicast VMS and Synergis access control was selected to serve as the platform or brains of McCormick Place's new system. Among many things, its rich feature set would allow emergency command center (EOC) security personnel to electronically control all doors and entryways but also link camera feeds to them for verification; store, retrieve and share video recordings through the Cloud and via Genetec's Clearance product; display and utilize map overlays to enhance visualization and usability of all system devices; and permit augmentation of thousands of macros making the solution unlike any other in the world.

Tailoring to Suit Needs

More specific aspects of the systems, equipment and custom tailoring are as follows . . .

Access Control: Approximately 1,500 doors are monitored by the Genetec software, with 900 having HID iCLASS Seos card readers. The Genetec platform provides numerous reporting capabilities on cardholders, doors, gates and areas of which the end user is taking advantage. Hundreds of rooms can be controlled with just two mouse clicks. Position switches were included on all doors, some of which were equipped with latch bolt monitors such that propping of doors or tampering with latches triggers alerts within the Genetec system to the EOC. Most of the door locking hardware is a variety of ASSA ABLOY products. HID Fargo 5000 badge printers with laminators were installed for badging with custom holographic overlays. Reusable durable paper MIFARE cards are providing cost savings. Zenitel Stentofon intercoms were also placed to meet specialized communication needs. In addition, 1,100 Interlogix door contacts were installed.

Video Surveillance: Approximately 700 primarily Axis cameras of various models appropriate to their location provide real-time situational awareness as well as forensic review capabilities via the Genetec platform. While analog cameras remain in spots, the system has mostly been converted to IP with predominant-

ly fixed models and a handful of pan/tilt/zooms (p/t/z). In some cases, multisensor IP megapixel cameras have supplanted what in the past would have entailed a p/t/z for that coverage. Bosch license plate recognition (LPR) cameras were also installed in the parking areas. MPEA's chief security officer is a deputy chief with the Chicago Police Department, which has a post within McCormick Place, and 100 public cameras surrounding the campus have been federated into the Genetec platform as well. A FLIR thermal imaging camera is used to detect violators of McCormick Place's park curfew. Currently, Briefcam is being evaluated as a means to introduce video analytics to the solution.

Systems Integration: The access control and video is seamlessly integrated to allow instantaneous viewing of people as they enter, exit or otherwise engage with a door or entryway. As previously indicated, the project included scores of custom-programmed macros for door control and access level control. Another interesting feature is when emergency defibrillators located around the campus are accessed it automatically trains the closest camera to help quickly assess those situations. Fiber optics and Cat-6 cabling infrastructure was deployed to create a high-bandwidth security backbone delivered and routed via Cisco network switching. The project involved a total of more than 193,000 feet of cabling and 55,000 feet of conduit, and also included Altronix power supplies.

Emergency Operations Center: The system is monitored in a centralized EOC dispatch center where users interact with a video wall as well as multiscreen HP workstations. Security personnel use maps of the buildings to monitor cameras and doors as well as control every door with the ability to unlock, lock and activate/deactivate access levels. McCormick Place's SimplexGrinnell fire system also feeds into the EOC.

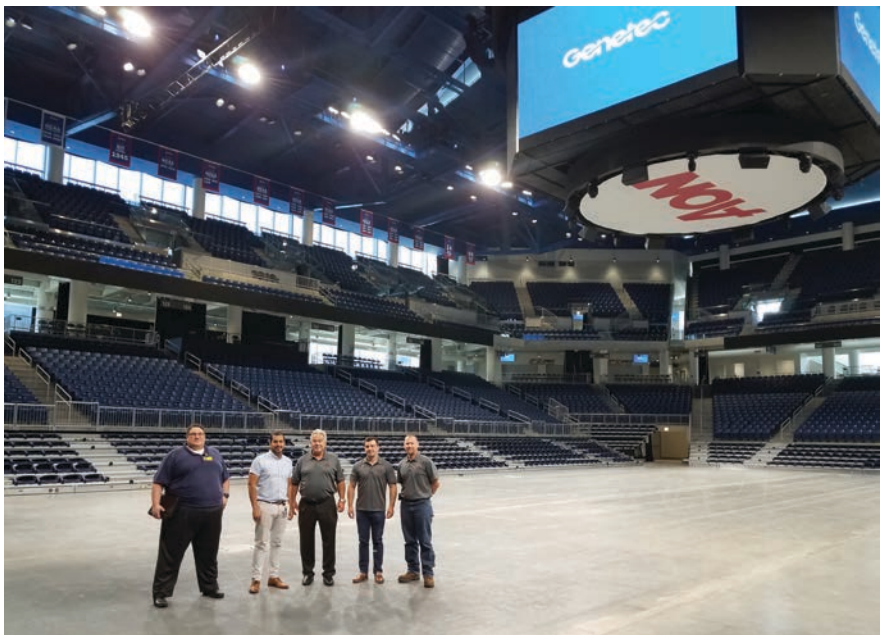
Project Executed With Precision

A substantial factor in the McCormick Place undertaking proceeding with nary a hitch must be credited to Videotec's proven past performance putting similarly large-scale projects safely to bed. It was not uncommon for an entire section within one of the buildings to be completed within a two-week time frame in between booked events. Fortunately, the integrator had its technique down to a science and avoided any potential problems.

"We were given hard deadlines to complete a total system turnover. These areas had to be fully tested and operational by the deadline as a show was often moving in the next day. Keeping the existing access control system functioning while bringing the new one online was also a challenge," says Lee.

He provides further details of the successful process Videotec repeated throughout the project: "The new system was installed in parallel with the old system to minimize downtime and disruption for the customer. The fiber infrastructure was installed, servers, workstations and switches were brought online prior to any new panel or new reader being installed. All of the existing cameras were migrated to Genetec from the existing VMS. The panels were prepro-

Dave Runnels and Buddy Lee (*top photo*) run project integrator Videotec. Lee also shown (*bottom, middle*) with his project leads to his left and McCormick's Frank Solano and Brett Zelnio to his right.



grammed, installed, and brought online with the doors being preprogrammed into Genetec, so that as soon as the reader was moved to the new system, that door was operational."

Even the best and most experienced security pros can always learn something new or find ways to improve, and that was the case for Videotec as well. According to Lee, the biggest takeaway was that a portion of the project could have been treated as a software development cycle due to the amount of customization needed. That would have provided more efficiency through the custom macro map integration, he says.

Operations Successfully Optimized

With the new system in place it did not take long for its value to make itself known — from an operational as well as a security standpoint. The system offers several operational efficiencies from the investigation of incidents to servicing customers with the ability to remotely unlock/lock doors. However, the greatest efficiency gain, says Lee, was through the use of custom-built access level override maps. What used to take security staff 90 minutes to address, thanks to the access level override maps is now completed in seconds with only a couple of mouse clicks.

The access level override feature allows the user to remove or add predefined access levels on demand to an area, room, bank of rooms or floor through a custom GUI that uses custom-built macros. These GUIs provide a visual indicator of the status of the access levels for each room that was included. Macros were also created and placed on floor maps to allow the user to unlock all the meeting rooms for a specified time period with the click of a mouse.

It is evident McCormick Place's management and security department are enjoying the heightened efficiencies and myriad benefits on a daily basis. Of course though, first and foremost the new system has raised the bar on the facility's security and safety campus-wide. It is powerful tool not only for crime deterrence and incident response but also for real-time prevention and forensically for investigations. According to Solano, shortly after the system went online it was used to help police solve an active case by identifying and leading to the apprehension of a thief using fraudulent credit cards within the complex.

Videotec's dedication to working closely with Solano, Zelnio and staff to ensure system capabilities best support McCormick's needs has cemented the relationship. "Videotec went out of its way to understand what we wanted and how we wanted it — going well beyond the minimal," says Zelnio. Lee adds the project established a bond with the end user and deepened its partnership with Genetec. "This installation has built a relationship with the client that has already led to more business, and is one we expect to only grow stronger with time." SSI