

GAMEDAY SECURITY™

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THE FUTURE IS NOW

*How advancing technology
is shaping stadium security*



NATIONAL CENTER FOR SPECTATOR SPORTS SAFETY AND SECURITY AT THE UNIVERSITY OF SOUTHERN MISSISSIPPI



Deploying new design strategies and technologies can help keep venues even safer and more secure.

By Michael Popke

A “PERFECT STORM” IS BREWING, and Russ Simons can feel it.

“I’ve been in the security business now for nearly 40 years, and I’ve seen lots of changes,” says the managing partner and “chief listening officer” of Venue Solutions Group, a facility management consulting firm. “But it seems that, particularly over the last five years, the rate of change in the industry has sped up exponentially. We actually have a perfect storm of things happening.”

Specifically, since the COVID-19 pandemic, many fans now act more selfish and disrespectful, resulting in more fights in the stands and increased mistreatment of venue employees, Simons says. At the same time, facilities are struggling with security staffing shortages and loss of institutional experience.

“We have lower staff numbers, those people are less experienced, they have fewer tools and they’re facing more intense circumstances,” Simons says. “We’ve got to solve for that.”

Increased training and bolstered communication are critical parts of that equation, he acknowledges, but so is leveraging new design strategies and advanced technology.

To that end, Simons will lead a panel titled “Trends in Facility Security Design” at the 2023 National Sports Safety and Security Conference & Exhibition in June in San Antonio. Topics covered will include design security, perimeter security and technology security. *Gameday Security* caught up with the industry experts who will sit on that panel for a rundown of safety and security improvements venue operators can make — whether building a new stadium or renovating an existing one.

DESIGN SECURITY: INSIDE AND OUT

To provide some context regarding how stadium safety and security concerns have escalated over the past quarter-century, Brady Spencer — a senior principal at venue design firm Populous — offers this stark comparison: “Back then, I think we were more focused on security around the stadium.

Things like bullet-resistant glazing for ticket windows and anti-graffiti and anti-vandalism materials outside. Now that focus has really moved to the outer perimeter of stadiums.”

Lines of jersey barriers and chain-link fencing won't be enough these days, he adds, noting that anti-scale and anti-pass fencing are becoming more common specifications for both new venues and renovation projects. Those types of barriers often feature anti-cut welded heavy steel wire mesh that make it difficult to establish a foothold or slip through a weapon to an individual on the other side.

“Stadiums are places where people gather to experience sports or concerts, and we don't want them to look like prisons,” Spencer says. “We want them to be inviting, but they also have to be secure. It's all about balancing those two priorities with something that is visually appealing and integrates with the design of the stadium and its surrounding environment as a whole.”

Even the use of traditional perimeter security solutions such as bollards, wedge barriers and drop arms should be reconsidered — not necessarily for practicality but for their overall effectiveness. Older barriers might not be rated, according to Matt Nebel, director of secure design for the international engineering consulting firm Walter P Moore. Today's vendors sell products rated by various testing agencies to meet certain standards.

“When a 15,000-pound truck traveling at a certain speed rams into a barrier, how far does that truck propagate past the barrier?” he says. “When we do our assessments, we're determining, based upon our engineering analysis, what rating for a barrier is needed at certain points of the facility. And then we work with proprietary vendors to procure and install those particular rated barriers around the site. If a barrier is not rated, it may not have the right strength to stop the vehicle.”

In fact, Nebel says he and his team of experts have started referring to “perimeter security design” as “vehicle impact design.” Many ramming vehicle incidents are not the work of bad actors but rather distracted or impaired drivers. (For more on mitigating the use of vehicles as intended or unintended weapons, see related feature article in this issue.)

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Safety- and security-related design improvements are happening inside stadiums, too. Concourses are wider and more open, and frequently used elements such as entry doors and restroom plumbing now feature stronger, thicker materials to better withstand fan abuse. Similarly, upgrading or reanchoring signage that is easily accessible and tempting for fans to steal or damage can be accomplished with tamper-resistant screws or hidden fasteners. And replacing old-technology lighting with LED lighting not only will be more energy efficient but shine more brightly on concourse areas and other indoor and outdoor spaces — especially those that previously weren't well-lit.

Electronic ticketing is now reaching new levels of sophistication, too, according to Spencer. Many stadiums now equip suite entrances, certain elevators and other limited-access areas with ticket scanners to allow access only to authorized guests. That practice works for players, too, in the form of facial recognition readers that eliminate the need for members of a home team to carry badges to enter access-controlled spaces such as locker rooms. (For more on facial recognition and authentication technology, see related feature in this issue.)

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Additionally, stadiums are subject to security audits in which they receive a grade; depending on the outcome, consultants will be hired to do a facility assessment. “We do a lot of those — looking at both gameday security and non-gameday security, how those needs differ and making sure that both are accommodated,” Spencer says.

Taking a long look at venue elements that might go unnoticed in the chaos of gameday also can result in significant design improvements. For example, maybe young trees that were planted when the stadium opened have now matured to the point in which they now block illumination from some of the outside lighting fixtures. Inside the venue, loading docks typically are among the busiest locations on non-gamedays, so consider upgrading the security command center near the docks — which also then can be converted to an enhanced gameday security command center.



When planning design renovations, consider potential timelines, too. Assessments, design development and the actual improvements all take time, Nebel says.

“There’s a process to doing a perimeter security project,” he explains. “Typically, it starts with the assessment of the existing facility to determine critical locations. That can be a couple of months. Then the development of what we call the construction and permitting documents and engaging with a construction manager to do the actual construction of the perimeter security elements can take several months. If it’s a smaller project, it could be done in an offseason. But if it’s an upgrade to the entire perimeter of a very large venue, that potentially could take several offseasons to do.”

TECHNOLOGY SECURITY: AI AND MORE

As noted above, staffing is one the biggest challenges facing stadium security teams right now, which can have a direct impact on the way venues leverage technology such as video cameras.

“The more cameras you have, the more challenging it is for security personnel to manage them,” says Gene Goetz, senior security consultant for Smith Seckman Reid Inc., an engineering, commissioning and technology services firm. “And so, what’s been helpful over the last few years — and it’s really getting advanced — is built-in video analytics, which essentially puts artificial intelligence into the analysis of what each camera is seeing. That could be movement like fights happening, people being in areas they’re not supposed to be in, somebody leaving a bag behind.”

The AI-enhanced technology features preprogramming for dozens of scenarios and allows for hundreds of cameras to relay critical real-time information via audible and visual alerts to what might only be a small number of camera operators — who then can dispatch personnel to defuse the situation caught on video. Other video products incorporate analytics as part of an entire video

management system, Goetz says, adding that the increased expenses associated with video technology investments could be well worth the price tag.

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GENE GOETZ

“When you think about the cost-benefit analysis, people cost a lot more than technology, and if you’re having staffing problems, you can leverage technology to help fill some of those gaps.”

Technological advances also are helping alleviate long wait times for fans entering stadiums.

Frictionless weapons detection search technology uses vertical rods equipped with digital sensors and AI to spot concealed weapons and other threats, and its presence at sports venues, schools and medical facilities is increasing, according to Goetz. Ideally, the process eliminates the need for fans to empty their pockets and undergo bag checks, and the sensor rod stations occupy a considerably smaller footprint than traditional security-checkpoint equipment.



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“No one has to come into contact with you or your stuff. You just walk through, and an alert will be based on detection of knives, guns or anything else that could be considered a weapon,” Goetz says, noting that some Major League Baseball teams debuted frictionless weapons detection search technology during opening week of the 2023 season. “This is still emerging. It’s an excellent concept and an excellent technology, but it definitely needs a little more time to mature. It still has a high false rate, which could potentially cause a lot of slowdowns. But it’s the wave of the future.”

With new design strategies and advancing technology, the opportunity to make stadiums safer and more secure than ever is within reach for venue operators. “What I love about my job is that the industry continues to evolve, and we keep learning new things,” Spencer says. “We like solving challenges, and every stadium is different.” ●

Acting on the SAFETY ACT

The Department of Homeland Security’s SAFETY Act was passed in 2002 in the wake of 9/11 as a way “to provide critical incentives for the development and deployment of anti-terrorism technologies by providing liability protections for Sellers of ‘qualified anti-terrorism technologies,’” according to the act’s [website](#). (The acronym stands for “Support Anti-Terrorism by Fostering Effective Technologies.”)

“It is up to individual venues to design for this,” says Matt Nebel, director of secure design for the international engineering consulting firm Walter P Moore. “And now measures like threat vulnerability assessments, blast-resistant design features, perimeter security and vehicle impact design are creeping into design standards.”

Renewed interest in the act by venue operators began to surge in the mid-2010s — when the number of attacks on soft targets like stadiums and arenas increased, Nebel notes. He cites as one catalyst the 2017 Manchester Arena bombing in England, when an Islamist extremist suicide bomber detonated a homemade bomb at the end of a concert by pop singer Ariana Grande.