



The School District of Philadelphia's Craig Johnson (left), Chief of School Safety, and Andrew Speese, Deputy Chief of Information Security, collaborated on the district's updated security system.

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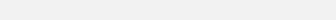
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# Physical Security in Schools Requires a Holistic Strategy

Combining physical security solutions can keep schools safe.



by Erin Brereton



Erin Brereton has written about technology, business and other topics for more than 50 magazines, newspapers and online publications.

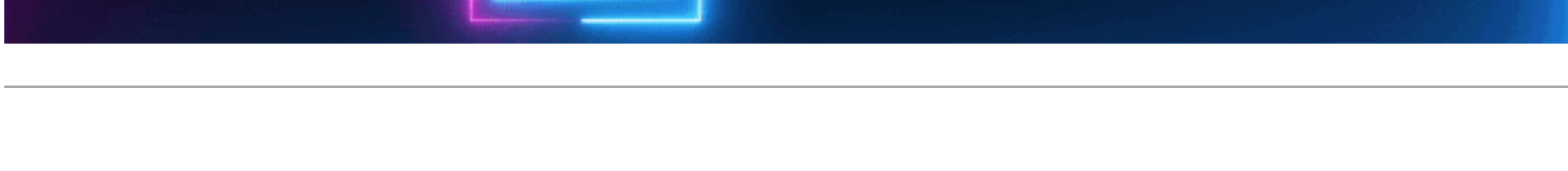
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With a wealth of [technological tools](#) available to secure K–12 campuses, assembling the ideal combination to meet a district's specific safety needs may seem daunting.

The Partner Alliance for Safer Schools, a nonprofit that provides information to help schools make informed security investments, has published a [checklist](#) and guidelines for reviewing and strengthening your district's current safety approach.

Having a team of [internal and external stakeholders](#) — such as school IT and facilities directors, law enforcement and other community partners — and a third-party consultant assess physical risk across the district can also be helpful, according to Guy Grace, PASS's Technical Advisory Committee chair and board vice chairman.

[Click the banner below to learn more about physical security in K–12 education.](#)



"Often, if you have that team in place in your district and that external third-party consultant coming in and doing that too, you're going to find some vulnerabilities that maybe were missed by either stakeholder," Grace says.

## Usage Plans Can Dictate What Should Be Installed — and Where

The [School District of Philadelphia](#) is currently replacing its analog security cameras with digital versions. To determine which type would be best, the district initially focused on identifying its performance needs.

Consultants and product vendors such as [CDW](#) examined school building layouts and suggested potential camera models and mounting locations, which led the district to purchase an enterprise-level video management platform from Genetec.

Installation began in 2023 with assistance from CDW; 14,000 cameras will eventually be placed, according to Craig Johnson, chief of school safety.

The district's previous cameras essentially functioned as stand-alone systems, producing footage accessible only to local safety officers or principals within a specific building.

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Footage from the several thousand digital cameras that have been installed is stored locally at schools and can be pulled to a central location to be viewed.

"It is not a [cloud-based system](#)," says Deputy Chief of Information Security Andrew Speese. "Streaming cameras all day through the internet from our 158 locations would be a pretty intense demand on our network. And, if we were to lose network connectivity, when you keep cameras local, they'll still be filming because they don't need an internet connection to function."

Two years ago, the School District of Philadelphia also began using [drones](#) to monitor gatherings, such as [outdoor sporting events](#), as part of a pilot program at one of its high schools.



“The team will fly the drone over the stadium, and it can be an extra set of eyes on the perimeter.”

Craig Johnson, Chief of School Safety, School District of Philadelphia

Working with school safety personnel, students gain drone operation skills and credits toward graduation.

"The team will fly the drone over the stadium, and it can be an extra set of eyes on the perimeter," Johnson says. "We've had some incidents where individuals throw a bag or something over a gate; the drone was able to capture that, and resources were sent to intervene safely. It records video, so it can also serve as an expert witness in an incident."

**LEARN MORE:** [Camera upgrades at a California district result in clearer videos.](#)

## Connected Solutions Offer a Comprehensive Look at Campus Activity

North Carolina's [Iredell-Statesville Schools](#), encompassing approximately 2,500 employees and 21,000 students, installed [vape sensors](#) from Verkada in 2018 that can detect particulates in the air and send a text or email to alert an administrator, according to COO Mark Shinkaruk.

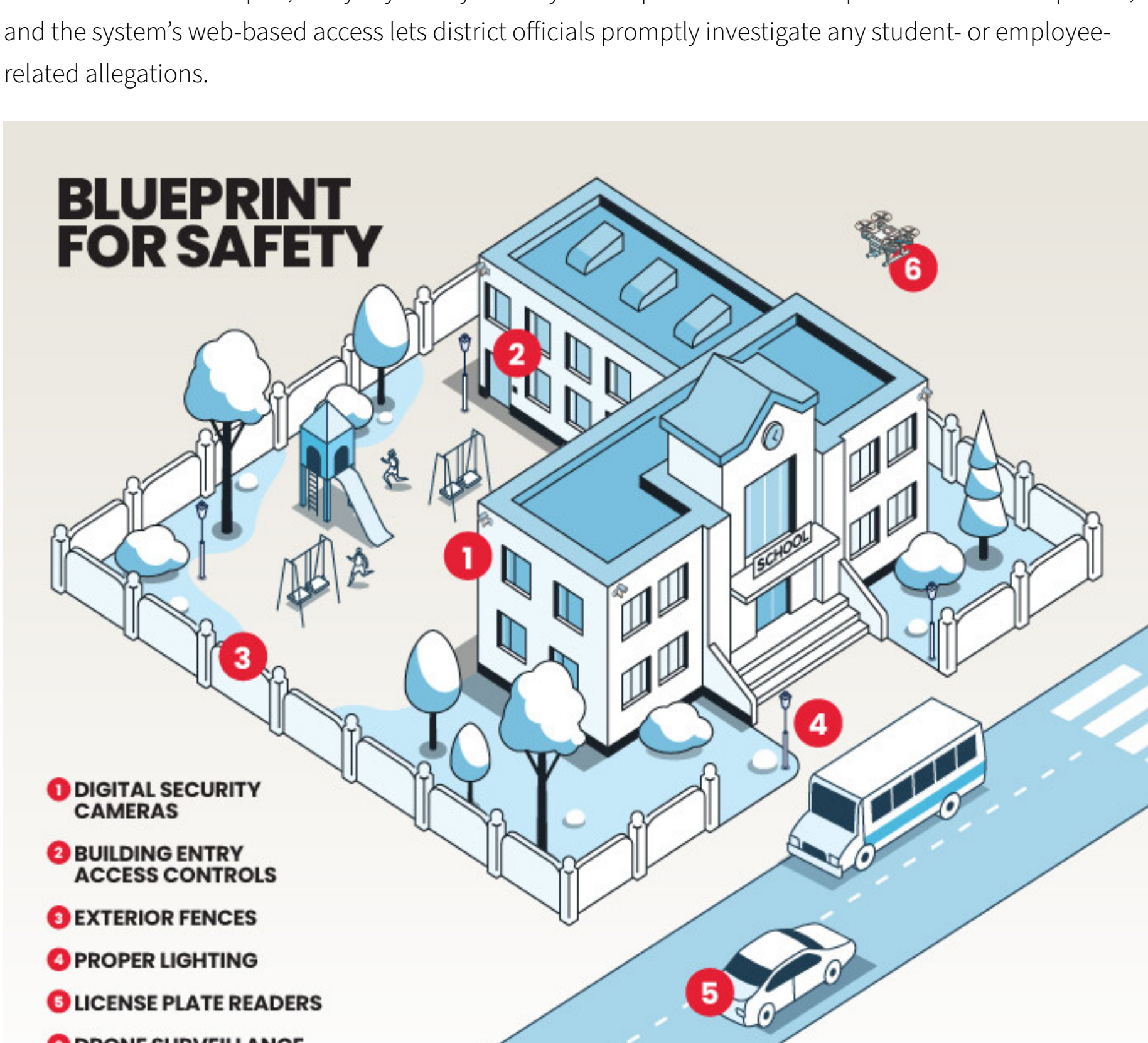
"It resembles a smoke detector," Shinkaruk says. "They're linked to our [camera system](#), so you can actually follow the graph of when the vape particulates are high and then see who's outside of the bathroom in the hallway, in an effort to combat the vaping epidemic we are having in middle and high school."

The district has since added other [physical safety solutions](#) from Verkada, including a video intercom [entry system](#), which can be used to remotely unlock or lock doors. It also added more than 1,700 hybrid cloud security cameras that offer a more user-friendly, nuanced experience than the previous system, says Electronics and IT Supervisor William Perry.

If a security incident occurs, [local law enforcement agencies](#) can easily access the Verkada system remotely using login information provided by the district. The cameras' [face recognition feature](#) will flag any individual whose photo has been uploaded — due to a domestic violence protection order, for example — and let the administration know that person is on campus.

"If there is a subject reported in a red hoodie, we can put that into the AI search bar and it will pull every individual that matches that description and tell us where they're located," Perry says. "It's pretty incredible."

With just a few full-time electronics department employees on staff, having a unified suite of security solutions has been helpful, Perry says. They can rely on the provider to handle periodic firmware updates, and the system's web-based access lets district officials promptly investigate any student- or employee-related allegations.



"The admin can log in and see vape sensors, cameras, doors — they don't have to go to multiple platforms," he says. In one instance, security personnel found a suspicious item in a schoolbag and were able to review camera footage to see who had passed the bag to whom throughout the day.

## Automation and Oversight Can Facilitate a Quick Response

When Rafael Cordero was hired as [The Riviera Ridge School's](#) director of IT and operations in 2023, upgrading the independent K–8 school's network video recorder camera system was one of the first changes he zeroed in on.

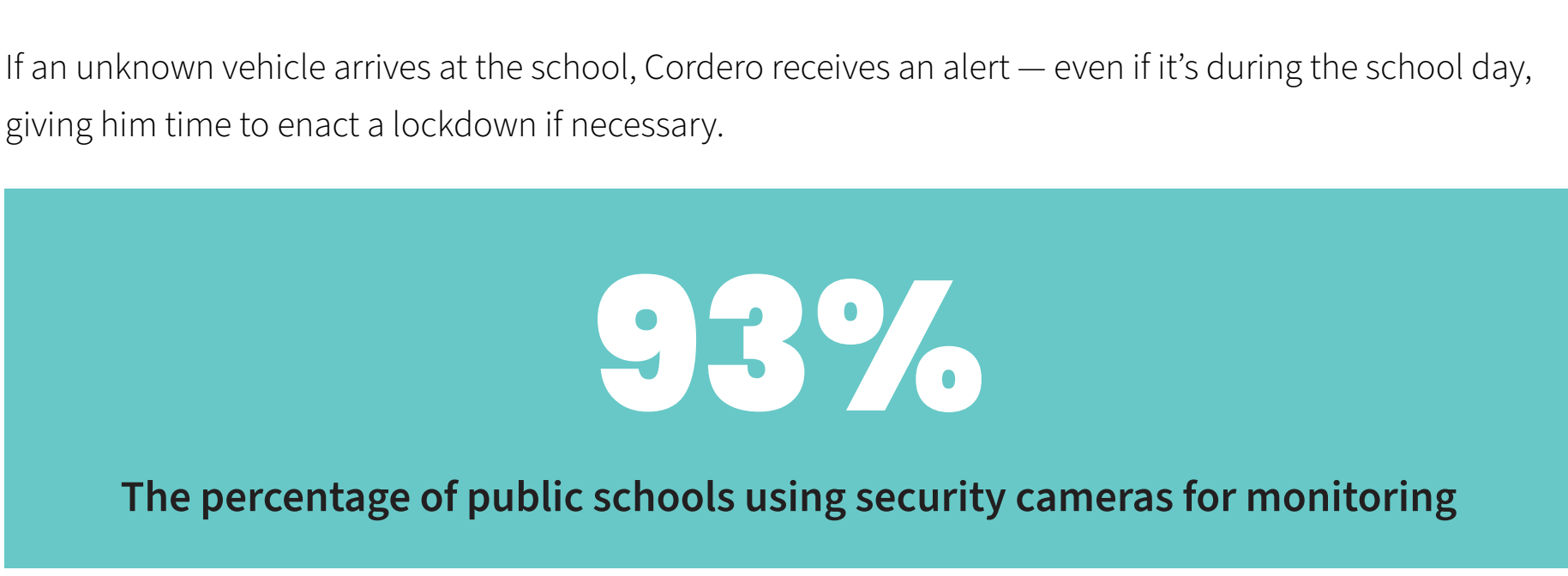
After adding [fiber-optic connectivity](#) to campus to ensure adequate bandwidth would be available for advanced technologies, Cordero decided to purchase digital cameras from Verkada, based on his research and recommendations from other schools.

A Verkada representative toured the campus and provided some installation and product suggestions; with cameras now present at entrances and [around the perimeter](#), the school can take advantage of features ranging from real-time monitoring to license plate recognition.

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If the parent of a student pulls up in front of the school on the weekend, the person's car is automatically assessed using a database of recognized license plates. Even if the system finds the vehicle has been to the school before, as a precaution, a live Verkada agent working offsite will get an alert and [review the situation](#) to make sure it's benign.

If an unknown vehicle arrives at the school, Cordero receives an alert — even if it's during the school day, giving him time to enact a lockdown if necessary.



Source: National Center for Education Statistics, "Report on Indicators of School Crime and Safety: 2023," July 2024

"One of the things I love about Verkada is they work around the sun," he says. "We have 24/7 monitoring. They call me, and if I don't answer because it's 2 a.m. here and I'm sleeping, they will contact the second person I have on the list. If that person doesn't answer, they call the police immediately."

When an emergency occurred prior to implementing the Verkada system, someone from the school had to notify the police via phone.

"I did not think that was a good protocol," Cordero says. "That's a huge responsibility for someone in the front office or a teacher."

The school has since installed three panic buttons on the campus that are wired into the phone and camera systems. If an emergency occurs, the system sends an alert, and the police are simultaneously called.

Verkada [air quality sensors](#) have also been affixed outside on campus; while Cordero says vaping hasn't been a significant issue, the sensors can detect potential wildfire outbreaks — a considerable threat in the region — before they burn out of control.

"Because we're in California, we have to have multiple resources," he says. "The Verkada detectors will also analyze the air quality, which will give us an idea if there is a fire or smoke around."

## AN UNEXPECTED PHYSICAL SAFETY BENEFIT

K–12 districts may find that tech implementations increase operational efficiency.

In addition to strengthening school security, the automation that some physical safety enhancements provide could help reduce the time employees spend coordinating aspects of building access.

Verkada's intercom access solution, for instance, can help schools lock doors, barring entry if a threat arises. Iredell-Statesville Schools in North Carolina has also used the system to preset admittance privileges.

"Some of our schools have multiple buildings and might have kids move outside from one building into the next," says Shinkaruk. "We can line up the access controls to stay open during bell change so kids can get into those doors. Once the bell rings, that door is locked."

The district was able to swap out the ID card readers it used for employee entry with Verkada devices, using the wiring that was already in place.

Teachers and administrators can download and use the Verkada Pass app on their phone to enter buildings, instead relying on ID cards that were regularly lost or broken, according to Perry.

"I was making cards for half of my day," Perry says. "This has been a big help. We rent our facilities to a youth basketball league, and now we don't have to collect keys when their agreement is over. We can set parameters where they can only enter during the assigned time they've rented out the gym. Then, we take them off the list, and they no longer have access to the school."

PHOTOGRAPHY BY GENE SMIRNOV



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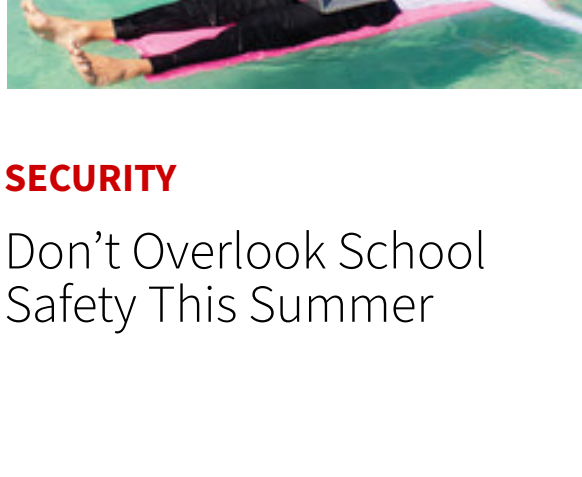
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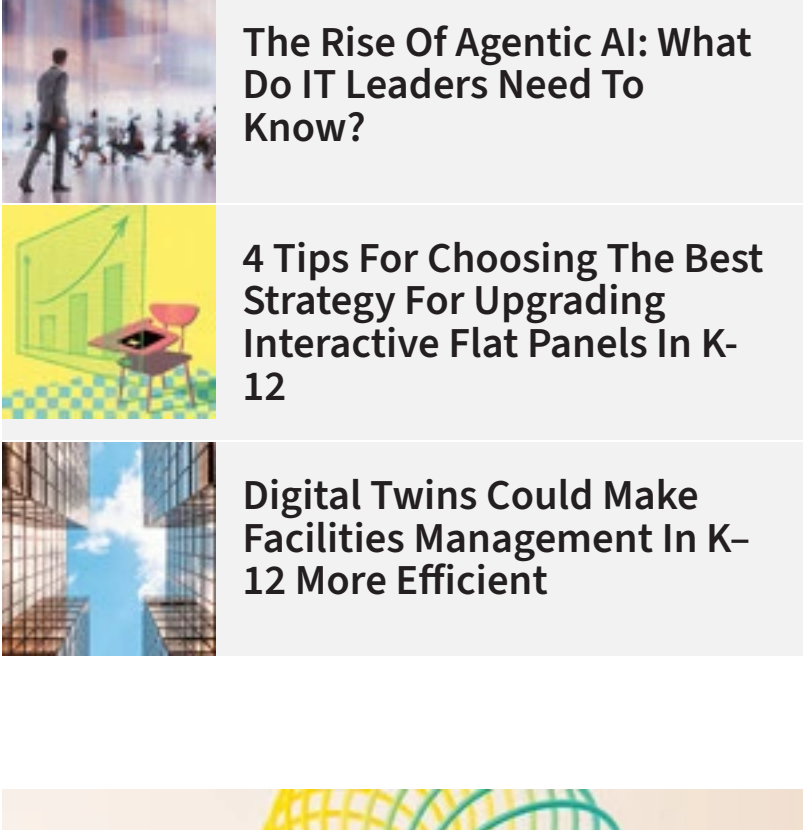
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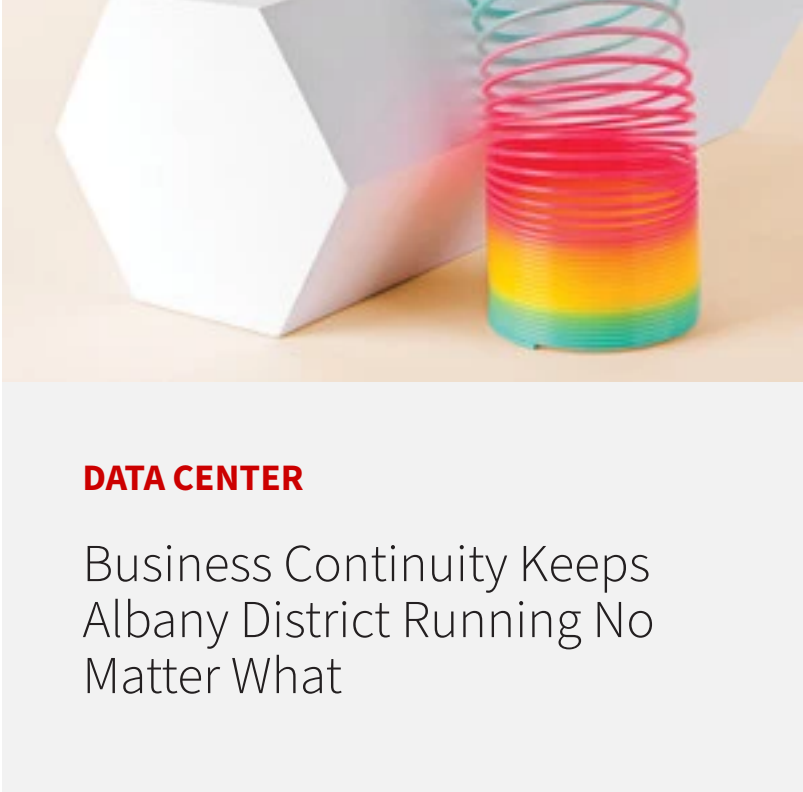
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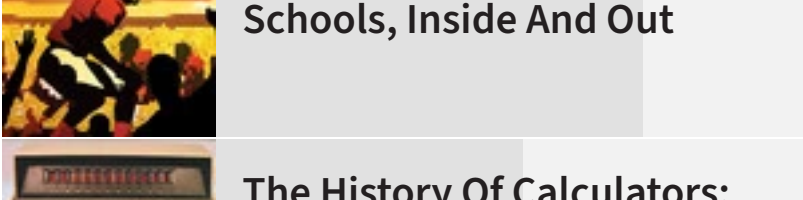
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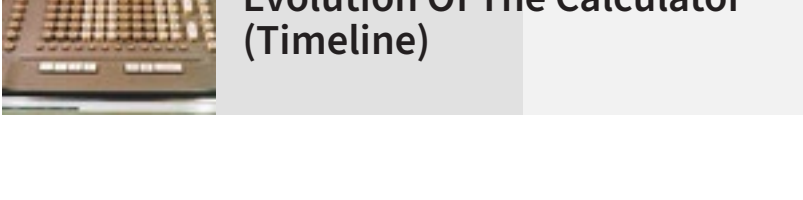
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