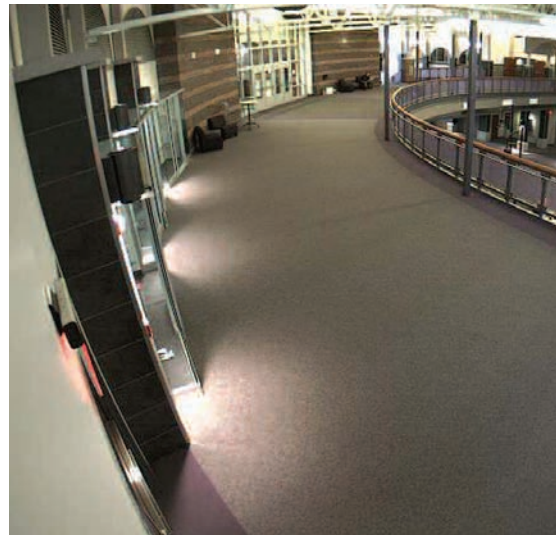
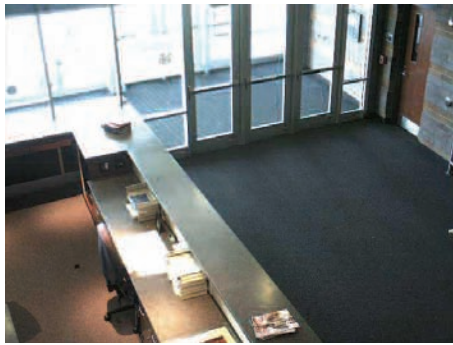
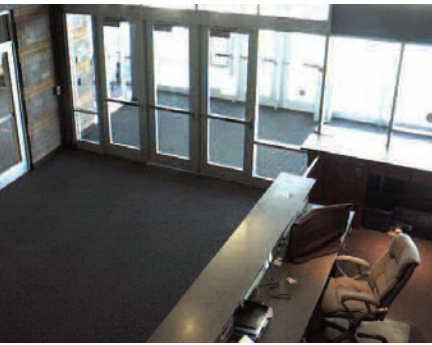
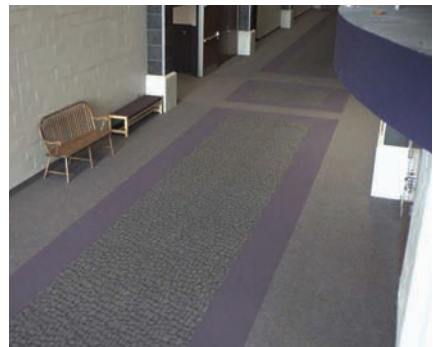
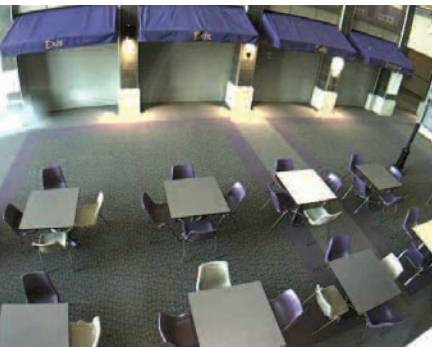


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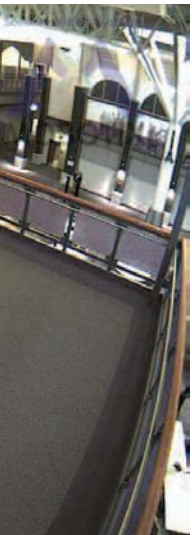
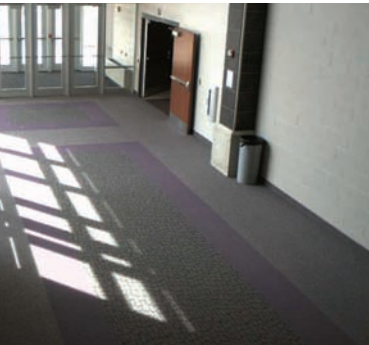


Jackson High School in Massillon, Ohio, as seen through Mobotix wide-angle megapixel cameras. Networked security for the \$45 million state-of-the-art addition was handled by ProTech Security.

SECURE

ONE HIGH SCHOOL'S LESSONS IN IP-BASED VIDEO

By Sharon J. Watson



With features ranging from a high-tech tufted vinyl carpet to special air filtration systems and updated kitchen equipment, the \$45 million addition to Jackson High School in Massillon, Ohio, was designed as a premier, state-of-the-art education facility. So it's little wonder the school's architect determined the new building's technology and security systems also would be cutting edge.

The school's existing analog video surveillance system definitely didn't meet that standard. The school's security officer made that plain to executives from ProTech Security Inc. when they signed in at the school to present recommendations for the new building.

"We told him we were a video company, and he said, 'This video system is the hardest thing I've ever used and the images suck,'" said Art Morrison, operations manager for the North Canton, Ohio-based

company. Morrison was quick to point out ProTech hadn't designed the old system and was, in fact, prescribing a next-generation solution based on IP-based cameras and software.

The company had to convince not just the security officer, but also the school board and other administration officials.

"We offered our vision of the way IP video should be, which is 100-percent open architecture and 100-percent megapixel cameras," Morrison said.

Prices for megapixel cameras could be a barrier, according to McKimm. "But it's invaluable to get those tools to first responders at a school or campus setting," he said.

That vision ran counter to the administration's original thinking.

"They were inclined to stay with analog cameras and DVRs," said Daniel McKimm, president of ProTech. But he and Morrison demonstrated how using an open architected solution, IP cameras and an NVR would let the school add cameras to the network quickly whenever they were needed.

"They began to understand the network scalability right away," Morrison said, a point driven home because the old system's DVRs filled quickly, making storage and retrieval difficult.

The administration also was intrigued that the existing analog cameras could be incorporated into the new surveillance network by using an encoder to digitize signals, McKimm said. That enabled the district to preserve some of its investment in the older system.

IN WITH THE NEW

The surveillance network ProTech designed and installed at Jackson High School uses a virtual local area network off the school's fiber backbone network. The VLAN supports 62 IP megapixel cameras from Mobotix AG that are deployed at key locations in the new 150,000-square-foot high school building, plus a bus barn.

Images captured by the cameras are routed to an NVR, a Dell Edge server box running under Windows 2003 Server. Video management software from Milestone Systems analyzes the video and determines what data to store. That video is offloaded via an Internet small computer systems interface (iSCSI) connection directly to a Dell MC300 storage area network.

The system enables the school to use the cameras as deterrents, as identity management devices, and as eyes and ears for first responders.

"Mobotix is a security solution with video as its core feature," McKimm said.

Because Mobotix cameras are IP-based, specific cameras can be addressed by other IP-based devices, such as mobile laptops and digital phones, so that security, police and fire officials can see what's happening in a particular camera location.

Further, in a feature Mobotix claims is unique, its cameras also support two-way audio direct via session initiation protocol. That means first respondents can use IP devices to address a specific camera and hear what's going on in a room. If appropriate, they could also speak through the camera to a room's occupants.

"An IP camera can give first responders the ability to be there, visually and audibly, at the scene of a crisis," said McKimm, a former law enforcement officer and FBI Academy graduate.

The open system offers convenience for users, as well as increased security. For example, a secondary entrance door at the school is routinely locked after a certain time each morning. The door is monitored by a network camera and a door intercom linked with a Cisco IP-based phone system. If a student arrives at the door to find it locked, he or she can use the intercom to reach the security officer on duty, who can confirm the student's identity via the intercom, as well as with the camera's visuals.

Cameras can be deployed quickly as deterrents because they are IP-ready right out of the box, Morrison said.

That was proven when the school's bus garage was badly damaged by vandals while ProTech was installing cameras in the new school building. The administration decided to add cameras to the garage, and ProTech deployed them within a day.



ProTech's Daniel McKimm: "An IP camera can give first responders the ability to be there, visually and audibly, at the scene of a crisis."



ProTech's Art Morrison: "They began to understand the network scalability right away."

BUILDING A BETTER NETWORK

Technical challenges for the new video network at Jackson High included increasing storage capacity and retrieval capabilities and greatly improving image quality without bogging down the VLAN. The functionality of the cameras and video management software helped ProTech address these.

One increasingly popular way to reduce the load on a video network is to put intelligent recording devices at the network's edge. Mobotix cameras do have intelligent capabilities, but Jackson High preferred the greater searching and retrieval capabilities offered by the video management system.

"The intelligence here is all in the server," Morrison said.

In addition, the school uses Microsoft's Active Directory and wanted to integrate its functionality with the video management system.

The NVR is another critical piece of the network.

"The server specifications have to be matched to what you're trying to accomplish," Morrison said.

The first issue is how many cameras are feeding data to the server and at what

frame speeds, which will determine the network load. For storage reasons, ProTech specified using the same 8 fps rate on all the cameras. With the cameras' megapixel capabilities, this rate still offers excellent image clarity, yet a reasonable network load, Morrison said.

A second consideration is how many people will be logging in to view the video data and how. At Jackson High, the school

principal and assistant principals access the video from the NVR via thin desktop clients and Web browsers. A resource officer from the local police department and a school district-employed security officer also monitor video.

Then there's long-term storage. The SAN easily stores 14 days of video, Morrison said. The plan is to deploy a second

SAN to accommodate data from 40 more cameras to be added in the second and third school renovation phases.

OPEN IS MORE SECURE

As former law enforcement officers, McKimm and Morrison are sold on the value of IP megapixel cameras for their clarity and ease of use.

Prices for megapixel cameras could be a barrier, McKimm said. But it's invaluable to get those tools to first responders at a school or campus setting. They also counsel security and administrative executives to make sure technology teams help map the transition to IP.

"Even when we talk with a security official first, we won't go any further until we talk to the information systems people," Morrison said. "We want to work closely with the tech guys too."

ProTech executives urge would-be IP video users to gain more security by keeping their networks and video solutions open. "Buy products that'll talk to each other via IP," Morrison said. True IP compatibility should make it easier to integrate video networks into access management solutions and other applications that could use digital image data.

Finally, be sure to vet the capabilities of

The Mobotix cameras have intelligent capabilities, but Jackson High preferred the greater searching and retrieval capabilities offered by the video management system.

the products, McKimm said.

"We're seeing a lot of companies come out of the woodwork with product offerings, but they don't know networks," he said. 📞

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