

## School Improves Image

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John Taylor Collegiate High School is described by its vice principal, Tom Tarrant, as a middle class school in work-a-day Winnipeg, Manitoba, Canada, some 300 miles northwest of Minneapolis, Minnesota. The 40-year-old facility has a student population of about 700 and a teaching staff of 40.

The building is perpetually busy. “It’s being used by the community whenever classes aren’t going on,” Tarrant says.

Unfortunately, that openness has also led to problems, such as frequent thefts. One night, for example, someone stole not just the contents but the *entire* soda machine.

The school also had its share of student fights and vandalism. Administrators worried about the threat of deadly school violence as has tragically occurred in several well-known cases both in Canada and in the United States. For all those reasons, says Tarrant, “we wanted to know who was coming into the school and know that students and staff [were] secure.” With that objective in mind, Tarrant, who is responsible for security at the school, turned to surveillance technology.

Each school in the 30-school St. James Assiniboa School District of which John Taylor Collegiate is a part is responsible for its own security. The surveillance program there began a decade ago with analog cameras and what was then a state-of-the-art digital recording system, called VIP Video Management by Stanley Security Solutions of Indianapolis, Indiana. At that time, Stanley was the only digital provider within the school’s price range. “None of the other companies even came close for affordability,” says Tarrant. In addition, the other systems he reviewed were “designed for banking or other applications,” making them hard for the school to customize to fit its needs.

Since then, Tarrant has upgraded the cameras and the software system several times, as the company produced new versions. This past summer, the school was asked by Stanley to serve as a beta-test site for the latest version—VIP X Video Management.

The school received the upgrade and equipment for free in return for serving as a beta-test site. The test began in June and ran the entire month. The system being evaluated consisted of a PC-based DVR with the proprietary recording software, a keyboard, monitors, and hard drives installed in Tarrant’s office with the camera recording system’s Windows-based proprietary software.

The recording software controls the school’s 26 fixed-lens color digital cameras—up from the original 15—placed in main hallways, stairwells, and other public spaces, with two outside, overlooking the parking lot. (Up to four more cameras will be added for the 2008 school year.)

The cameras feed images via coaxial cable to the PC. They are set at seven frames per second, although the system can run at up to 30 frames per second. The user interface allows Tarrant to set the frame rate and video compression rate for each camera, as well as to decide if a camera will go to motion-detection-triggered recording after hours.

Before the VIP X upgrade, Tarrant says that the system's architecture did not routinely allow him to simultaneously view live recordings while the system was recording live feeds, though earlier upgrades had made that possible on a limited basis. What's more, the system had limited storage capacity that could not easily be expanded. Recorded images had to be purged after about a week.

The VIP X system's modular, IP-distributed architecture solves that problem, as does the installation of IP encoders external to the PC that digitize the video, doing the work that the CPU used to do.

The new system has increased storage and capacity for more. The old system had three terabytes, while the new one "has nine terabytes with unlimited external storage capability," Tarrant states. With his current configuration, he can now store a month's worth of high-resolution graphics using MPEG-4 compression.

The new system also has a Web-based component. Tarrant can now remotely view any of the cameras from his home computer by accessing the Internet interface—a Windows-based browser.

Tarrant says he used to watch camera feeds on huge monitors that squatted on tables taking up a sizeable chunk of his small office's space. Now the monitors have been upgraded to rack-mounted flat-screens. "It makes my office so much more user-friendly," he says.

Tarrant says that the beta test went surprisingly well. While Stanley technicians were at the school installing the VIP X upgrade, he recalls, "They told me they were pretty positive that it wasn't going to have any issues. When someone says that to me, I think, 'I've got to test it.'"

As soon as the technicians left, he revved up the system, setting all the cameras to record at the highest resolution possible and "sat back waiting for something to fail," he says. "And I have not had a single issue since they left."

The system got its real test the night after the upgrade was installed. A man broke into the school by climbing through a window. Cameras caught the event, the DVR recorded it, and Tarrant was able to burn the clips to a CD-ROM and present it to local law enforcement.

"I was able to capture good images of him coming into the school and leaving with a laptop," explains Tarrant. As a result, "police apprehended the guy and retrieved the laptop."

The surveillance cameras don't seem to deter criminals, so incidents have not noticeably declined, according to Tarrant, but those events are now easier to solve, he says, which may have an impact in the long term. For example, the laptop thief mentioned earlier had previously broken into the school and the recorded footage had not been of a high enough quality to identify him.

In another case, a bathroom had been vandalized repeatedly over several school years. When the new upgrade was carried out, Tarrant had a camera placed that focused closely on the bathroom exit. He quickly found that the same boy was always present when the vandalism occurred—a "good student who was also the same one reporting the incidents to administrators," Tarrant reveals. After confronting the boy, Tarrant gained an admission that he was indeed the vandal.

In the case of the missing soft drink machine, when students learned that the school did not have funds to replace it, they came to Tarrant to help him review the camera footage. They identified the perpetrator, and the machine was recovered.

Tarrant meets with incoming freshmen on the first day of each school year to tell them about the system. “I say, ‘the cameras are not for following you. But if something happens to you, you come and see me, and we can sit down and find out what happened,’” says Tarrant. He adds that he tries to have them there when footage is reviewed “so that they can see how it works. I try to present it not as a punitive thing but as a helper.”

Parents are also informed that the system is not Orwellian but rather that it is for everyone’s safety. “I have yet to have a parent want us to turn off the cameras,” Tarrant states.