

## Swinburne University of Technology takes a clear view of security with Axis network cameras

IP-based surveillance protects student and staff.



Organization:  
Swinburne University of  
Technology

Location:  
Melbourne, Australia

Industry segment:  
Education

Application:  
Campus security

### Mission

Swinburne University of Technology wanted a new surveillance system to improve security and safety and deter crime across its large main site and five remote campus locations, beginning with its main Hawthorn campus – a challenging environment that includes a railway station, rail line, public streets, retail outlets, and 24-hour access to some facilities.

### Solution

Swinburne University leveraged its existing investment in IP technology by installing 180 Axis network cameras with Milestone's X-Protect head-end software.

### Result

The university has taken a quantum leap in the quality of its surveillance, with a network video system that can be used to monitor and assess security situations quickly, deter crime and help ensure the safety of security officers, staff, students and valuable assets around the clock.

The new network video system delivers exceptional image quality, and is cost-effectively built around the university's existing infrastructure. Security staff can now easily see what's going on across the site from a central location. High-speed access to quality, easily searchable recordings of incidents can be quickly made available to police or used in internal investigations.



## Challenging environment

With 45,000 students and 1,500 staff spread across six major sites, Swinburne University of Technology had in place powerful fiber and microwave-based network infrastructure to communicate and share resources between departments and campuses across Melbourne. However, it lacked an effective way to manage security and surveillance to protect staff, students, visitors and the hundreds of millions of dollars in assets under its control. With no centralized surveillance coverage, Swinburne's security department was unable to adequately assess and respond to incidents. It decided it needed a better solution for its complex environment.

The whole square kilometer main Hawthorn campus includes a railway station and has a rail line and public streets running through it. There are retail outlets, entertainment venues, car parks, buildings, roads and footpaths. "After hours, weekend classes and 24-hour operation of facilities like its computer lab added to security issues," explained Swinburne University of Technology's manager of security Grant Harrison. "There's a great deal of traffic across the whole site. After an incident police might ask us how many people had access to a particular area and we'd have to answer '1000s'. There was not a lot they could do sometimes," he said.

Legacy surveillance systems in some departments included about 120 cameras supported by multiple DVR-type systems that were installed at different times by different departments to meet different needs.

"Quality was poor (although good for the time), searching was near impossible and there was not what could be called an overall policy applied to surveillance," acting IT Security Manager Chris Goetze explained.

### Network video to leverage IP investment

The university decided on an IP-based solution to leverage existing infrastructure, including the significant investment it made in network infrastructure to go to VoIP back in 2001. Swinburne conducted its own trials on its own site before making a decision to install Axis cameras for the new system.

"We bought a mid-range camera from six manufacturers then did a trial on our network, and to be honest Axis

won before the price even came into it. Some of the other cameras were two or three times the price but the performance with Axis was simply superior," Goetze explained. "Once we made that key decision, we standardized on cameras: the AXIS 216FD camera for internals and the AXIS 225FD for externals, with both being PoE (Power over Ethernet). There's a PTZ – the AXIS 233D – as well as two AXIS 211W wireless cameras." Bringing the system together is Milestone XProtect Enterprise management software.

### A better view, a safer environment

The CCTV system is used for investigations, to assess situations and to ensure the safety of security officers, staff and students after hours.

"Because we had not invested heavily in analog CCTV up to this point we had a clean slate, and that was brilliant when it came to choosing IP. As a result we've taken a quantum leap from not very much in the way of surveillance to something very capable," Harrison said. "Now our security staff can see what's going on around the campus and can be aware of their own safety and the safety of students and staff."

"We find staff and students on the campus are quick to alert the security office to incidents and we can then view footage from the CCTV system and if needed give quality video footage to police," Harrison continued. Further boosting safety, cameras have been placed on every second light pole on the railway walk on both sides of the train station.





## Flexible, simple deployment

Swinburne's IT team was responsible for much of the installation, including commissioning the cameras and setting up the system's backend.

"Because of the quality of the VoIP infrastructure that went in back in 2001 we've been able to leverage off that infrastructure with our camera installation. It's been great – there's been no further investment in the network and no additional switches or significant cabling," Goetze explained. "The AXIS 211W Network Cameras have been really good. Because we have a full wireless network across all our campuses we've been able to deploy these cameras anywhere we needed them at any time. They are driven off power points and couldn't be any easier to setup. The installation was an absolute breeze from our perspective."

"Once we worked out where cameras needed to go and where we could put them cost effectively, we just had our contract data cablers install standard Cat-5 data cables to data points for the cameras. When they were connected we addressed the cameras and away we went. And because the Axis cameras are IP-based and have a fair bit of smarts, once the cameras are installed we can tweak them from our desks individually – that's a great feature."

## Quality all the way

Harrison and Goetze agree the quality of footage people see with the new solution sets the system apart. "When it comes to recordings we're going for broke on quality," Goetze explained. "Our recordings are in Motion JPEG, not MPEG-4, so it's high quality the whole way with full frame rate and full resolution stored at remote server rooms."

"People might argue about the cost of installing one camera but when they see the images they realize it's worth it and say, we need another three over here," Harrison added. Image streams on Swinburne's network vary between 24–30Kbps per channel.

"That's not a great deal but when you've got 180 cameras it adds up. Going to the next level there will be 200 cameras on the network. At this point the IP-Surveillance system is certainly not stressing the network...We're only using about 10 per cent of what our network is capable of," Goetze explained.

## Expansion to remote campuses

Ultimately the plan is to install network video at all the Swinburne campuses with images stored at remote servers for viewing at the Hawthorn control room.

"When we get all the other campuses online there will probably be 500 cameras on the system. When we incorporate remote campuses there won't be any additional load on the system because storage will be remote and the load relates to the number of feeds being viewed at one time. Given our bandwidth there should be no problem there," Goetze said.

## Easy to manage and search

The system gives the university much easier management and searching of recordings, according to Harrison. "It's also very easy to download images or video – it's easier than most of the programs you have on a home computer. If you want to find something from a given point in time on a given camera it takes a few seconds – no more."

"Another thing that's worth pointing out is how easy the system is for staff to use. We gave the security officers a five-minute intro and that was really about it. They played around and taught themselves the rest. We're very impressed with the quality of our cameras and the functionality of the system as whole."

## Value for money

A lot of people have come through the control room including the stakeholders at the university who paid for the system, and visitors from other universities.

"We can clearly show people what Swinburne is getting for its money and the things the IP surveillance system can be used for," Harrison said. "Many organizations have come through and they like what they see – we're certainly pleased with what we've been able to achieve for the money." He continued, "I think there's no doubt most people are happy we have IP surveillance and as the system grows there's a growing perception of its ability to respond to and deter crime on campus – people perceive they're safer."

## About Axis Communications

Axis is an IT company offering network video solutions for professional installations. The company is the global market leader in network video, driving the ongoing shift from analog to digital video surveillance. Axis products and solutions focus on security surveillance and remote monitoring, and are based on innovative, open technology platforms.

Axis is a Swedish-based company, operating worldwide with offices in more than 20 countries and cooperating with partners in more than 70 countries. Founded in 1984, Axis is listed on the NASDAQ OMX Stockholm under the ticker AXIS. For more information about Axis, please visit our website at [www.axis.com](http://www.axis.com)