Setting the Standard for University Security

Planning for Success

University research labs offer rich pickings to the thief in search of anything from high tech equipment, dangerous or controlled substances to years of painstaking research effort. The University of Dundee decided that its research and diagnostic laboratory deserved to be protected with one of the highest quality CCTV systems available.

Setting

Part of the Ninewells Hospital complex, the University of Dundee's Medical School is a semi-public space with a very high number of visitors, and NHS Trust and University employees working alongside one another. As the site is designed for accessibility the University's research and diagnostic laboratory is especially susceptible. The large numbers of patients, visitors and students on site provides perfect cover for criminal activity.

Guy Hickman, Estates Manager for the University of Dundee, explains the various pressures that led to the inception of a new CCTV system:

"On this site it's not always clear where the hospital ends and the medical school begins. The laboratories are a maze of corridors and are very close to public areas. It isn't difficult for the criminally minded to take advantage of the site's design."

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Campus Upgrade

The tender was issued in June 2002, and won by Scottish Communication Systems. The project installation was completed between September 2002 and January 2003.

"The areas covered by the CCTV system, are spread over three floors, and subject to extremes of people movement." explains Brian Davidson, Sales Manager of Scottish Communication Systems.

"At one end of the spectrum are areas that can experience very high flows of people. That means if individuals are to be monitored effectively, that very high recording frame rates are essential. Other areas within the complex are visited infrequently and we felt that here a recording solution that incorporated motion detection and event triggered search capabilities could prove the best option.

Another factor that was taken into consideration was the location of the secondary monitoring station, three and a half miles away at the main University campus site. The new system had to be capable of utilising the existing fibre optic link between the two sites."

Image capture

The project can be divided into three key aspects: image capture, recording and monitoring.

Currently, 88 discreet colour Vista fixed domes (VFD4V9C) are installed, mostly positioned in corridor environments, providing a combination of shots that ensures that a complete movement of a subject is recorded to a standard suitable for identification.

The Vista VFD4V9C fixed dome was selected for the combination of its high quality image capture and its very discreet nature. Although not a covert system many people appear totally unaware of the cameras' presence.

The centrepiece of the scheme's recording capability is a small control room that is home to 20 Vista Triplex™ Columbus Digital Video Recorders (Vista VC04Te-40), each of which is connected to a Vista VAIDe (Vista Array of Independent Disks/Ethernet) storage unit, currently installed with 8x160 GB hard drives providing 1.28 terabytes (TB) of digital storage. Also in the control room is a Baxall Pyramid 112 camera matrix system, a PY2 keyboard and a 14" professional colour Vista monitor from the PVD range. Recording is protected against power failure by a comprehensive UPS system. Individual camera power failure is also covered by alarms linked to the system's Matrix controller.

"The intensive nature of the recording set-up we have here is quite deliberate," explains Brian Hibbert, Scottish Communications Technical Manager. "The standard

image capture rate is 5 frames per second per camera. That seems incredibly high, but it's essential given the high traffic flows we encounter on the site."

The Triplex™ Columbus DVR attracted Scottish Communication Systems for its wealth of functionality and flexibility, and its relatively narrow bandwidth requirements. The name Triplex™ reflects the unit's three simultaneous operational capabilities - recording video from multiple cameras to an internal hard drive whilst simultaneously providing viewing of live and playback images on the same monitor. Of particular value to the University is the motion hotspot function that allows users to highlight an area of view and then search for previous motion activity within this area.

John Gilchrist, University Of Dundee Estates & Buildings Services Co-ordinator and Project Manager for the project, is delighted with the system's capability:

"From the beginning this project was planned and designed with regard to the problems of working in such a restricted area. We can add new cameras and expand the system at will as demand dictates with minimum disruption to the University. During the day the level of activity means that recording is continuous, but at night a different regime is called for with recording triggered by alarm only. Triggered by an alarm event, the Triplex™ DVR is able to begin storing to disk by recalling the previous five seconds of images leading up to the event. If an event happens, all frames are recorded, and this full recording continues for a pre-set period after the event. This guarantees that we capture the whole sequence of the event, before and after, without having to record hours of inactivity. This has longer term maintenance benefits for the system as a whole."

Primary responsibility for monitoring the system rests with the security office at the University's main site in the city centre. The equipment here consists of a Vista 17" colour monitor, a PY2 keyboard and a Vista timelapse VCR that allows the security operator to commence instant real-time/ timelapse recording as required. In the main hospital reception a Vista colour monitor acts as a visual reminder to hospital visitors that the site is under surveillance.

At this time the majority of monitoring activity is undertaken in the Estates Office where WaveReader software supplied with the Triplex™ Columbus DVR, provides staff with very extensive search capabilities across the whole system.

"The CCTV system is run over its own twisted pair network installed for the purpose", explains Brian Hibbert. "However, for the purpose of viewing and searching already recorded images, the WaveReader software runs across the University's own Ethernet local area network. This is obviously password protected."

"Of all the functionality available within WaveReader, motion search is one of the most useful", adds John Gilchrist. "Simply by highlighting specific 'motion grids' on the screen, it is possible to search for all activity in that area over a specified time period. This very quickly results in a list of images to view."

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>
> **Guy Hickman**

Guy Hickman says that from the University's perspective the system is a considerable success: "Much of this comes down to the process we adopted with thorough planning and participation of the affected communities. There were no significant implementation issues, the standard of installation is very high and all parties to the project have performed excellently. We anticipate this may become the standard installation specification for future University CCTV projects."

Scottish Communications Systems

Founded in 1980, Scottish Communications Systems is Scotland's largest independent installer of communications, CCTV, Access Control and Intruder systems. The company has offices in Perth, Edinburgh and Aberdeen and holds the Royal Warrant for the supply of equipment to HM The Queen.

www.scottishcommunications.com

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University of Dundee

The University of Dundee is ranked the 18th most successful teaching university in the UK with its graduates consistently ranked amongst the UK's top six in terms of job prospects. The University commands £56m in research funding (2002) and is home to two of the three most cited scientists in the UK.

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