

## Turning up the heat on solar field security.

Las Positas College uses Axis thermal cameras and bright halogen lights to protect its \$4.5 million renewable energy project.



**Organization:**  
Las Positas College

**Location:**  
Livermore, California, USA

**Industry segment:**  
Education

**Application:**  
Asset protection, safety  
and security

**Axis partners:**  
Electronic Innovations,  
AMAG Technology

### Mission

When the Sustainability Committee at Las Positas College in Livermore, CA launched construction of a 5.3-acre field of solar panels, the Campus Safety Department took charge of finding a cost-effective way to protect the \$4.7 million renewable energy project. Given the remoteness of the location and the lack of any light after dark, Campus Safety was especially concerned about the site's vulnerability at night.

### Solution

The college hired Electronic Innovations, a Richmond, CA-based security contractor and Axis partner, to design and install a security solution that would detect and deter intruders from entering the area. As Las Positas had already adopted Axis products as the campus security standard, Electronic Innovations decided to install several Axis thermal imaging cameras equipped with motion detection alarms at the site.

The cameras were tied into the campus AMAG Security Management System. The motion detection would also trigger an array of halogen lights to illuminate the solar panel field and the surrounding area.

### Result

Since its installation, the Axis thermal camera system has already alerted Campus Security to a group of intruders attempting to scale the fence and possibly vandalize or steal solar panels. The culprits fled when a security officer arrived on the scene.



## Securing solar fields after dark

Las Positas College in Livermore, CA has always been a strong proponent of green technology. When the institution decided to construct a \$4.7 million solar field with 4,680 panels in a rural, undeveloped area at the northern edge of the campus, the Sustainability Committee was focused on the 1.35 million watts of renewable energy that would be generated annually to help power the campus.

Sean Prather was focused on protecting this isolated 5.3-acre site from theft and vandalism. Given the remoteness of the location and the lack of any light after dark, he was especially concerned about the site's vulnerability at night.

Knowing that the fence surrounding the field was not sufficient protection for the college's investment, Prather hired Electronic Innovations – a Richmond, CA-based security contractor – to devise a more secure solution that would both detect and deter intruders. "They needed a network-based system that would not only alert campus safety to the presence of intruders, but would give intruders an indication that they had been spotted," said Eric Bledsoe, President, Electronic Innovations.

Given the prohibitive cost of keeping the property illuminated at night, Electronic Innovations knew conventional day/night surveillance cameras would not be an option. Using a design concept from a past solar project, the team decided to mount three AXIS Q1921 Thermal Network Cameras onto tall poles alongside 1500-watt halogen lights. The thermal cameras monitor the fence line, and when one detects motion using the camera's onboard motion detection, every halogen light in the field instantly switches on. The sudden blast of light lets intruders know they had been discovered.

"We chose Axis thermal imaging cameras not only because they didn't need light, but also because they could detect motion at long distances and their sophisticated analytics would help us eliminate false alarms," explained Bledsoe.

Electronic Innovations fine-tuned the camera analytics to make sure local wildlife, such as deer, birds, bats and cats, would not trigger the system. "The last thing we wanted was for the lights to turn on every 10 minutes," Bledsoe said.

### A bright spot in perimeter security

The thermal cameras in the solar field are connected via fiber optic cable to the AMAG Technology Symmetry Security Management System the college uses to manage access control, intrusion detection and video surveillance across the campus. When the cameras detect any motion in their field of view, they immediately send an alert to AMAG's Symmetry system housed in the Campus Safety office. Symmetry automatically puts the alert on the video monitor indicating which camera triggered the alarm. The safety officer can watch the live video stream, determine the size of the intruding party and respond to the incident within minutes.

AMAG's Symmetry simultaneously broadcasts an email to safety officers' smartphones to alert staff at the main desk and on patrol. After hours, Las Positas College works with an alarm monitoring company that calls campus safety officers directly when an alarm comes in.

The thermal surveillance system has already proven effective. Within the first few months of operation, the thermal cameras spotted half a dozen individuals hopping the fence line. The system sounded the alarm and the halogen lights lit up. Back in the Campus Security office, an officer watching the monitor called the local police and dispatched a security patrol car to the scene. When the officer arrived at the field, spotlight blazing, the intruders fled the scene.





"Our response was so quick, they never had a chance to vandalize or steal any property," Prather said. "But without that security system up there, we would never have known they were there until it was too late."

### Using Axis as the campus surveillance standard

The solar field was not the first Axis project on campus. When support for the college's old analog camera system was discontinued, Electronic Innovations introduced them to Axis network cameras and the benefits of upgrading to IP video.

"Once they saw the difference in image quality, the cameras sold themselves," Bledsoe said. Las Positas soon decided to make Axis the campus standard going forward.

Today the college uses a mix of AXIS P3346 Fixed Network Cameras and AXIS P5534 Pan/Tilt/Zoom (PTZ) Network Cameras to give its students, faculty and staff a greater sense of safety on campus. Designed primarily as an evidentiary tool, the surveillance cameras focus on high-traffic areas in and around the new Student Services Center that is the main hub of campus activity.

The automatic day/night feature of the 3-megapixel AXIS P3346 Fixed Dome Network Camera delivers great resolution even in lowlight conditions. The college uses them primarily for hallways, stairways and building entrances and exits. They also installed the fixed dome cameras in the Bursar's Office and by the campus ATM – two locations Campus Safety identified as high risk areas.

The AXIS P5534 PTZ Network Cameras are also tied into several emergency call stations in the newly constructed areas of the campus. When a student in trouble presses a call button, the camera closest to that vicinity automatically snaps to that location so that campus security can observe the situation and immediately dispatch an officer if necessary.

Las Positas College and Electronic Innovations continue to find novel applications for the Axis products. One project involves using high resolution cameras to capture pictures of license plates at campus entrances and exits. "We've already field tested Axis cameras at those locations to monitor vehicles entering and leaving the campus," reported Sean Prather. "What it proved was that not only would we be able to capture license plates, but we'd be getting great coverage of the pedestrian crosswalks and the intersections, too. From a liability standpoint that's really great because we get over 3,000 vehicles entering and exiting our campus daily."

**"Without an alert from the Axis thermal cameras, we'd never know if an intruder had entered the solar field. That deterrent has probably saved us millions of dollars in potential damage or theft."**

**Sean Prather, Campus Safety Supervisor, Las Positas College.**



**"Once they saw the difference in image quality, the cameras sold themselves."**

**Eric Bledsoe, President, Electronic Innovations.**

[www.laspositascollege.edu/about/](http://www.laspositascollege.edu/about/)



# About Axis Communications

Axis offers intelligent security solutions that enable a smarter, safer world. As the global market leader in network video, Axis is driving the industry by continually launching innovative network products based on an open platform – delivering high value to its customers and carried through a global partner network. Axis has long-term relationships with partners and provides them with knowledge and ground-breaking network products in existing and new markets.

Axis has more than 1,600 dedicated employees in more than 40 countries around the world, supported by a network of over 60,000 partners across 179 countries. Founded in 1984, Axis is a Sweden-based company listed on NASDAQ OMX Stockholm under the ticker AXIS.

For more information about Axis, please visit our website [www.axis.com](http://www.axis.com).