

Camera Technology Elevates Security, Safety and Jobsite Performance

Advances in technology make jobsite camera technology much more than a theft deterrent.

By **Curt Bennink** August 4, 2020



EarthCam's artificial intelligence automates visual inspections and logs for 19 different vehicle classifications. Each 24/7, a log entry is automatically created with a list of all detected equipment accomplished by an annotated photograph so you can visually verify when equipment arrives on site, is in use and when it is removed.

Construction sites are often the target of theft and vandalism. This is why camera technology initially found its way onto the jobsite. Modern camera-based technology can help you secure even the most remote site, providing real-time intelligence.

"Motion-detected event notification alerts can be pushed to your email or mobile device (via SMS/text)," says Wendi Burke, vice president of marketing, Sensera Systems. "These notifications can include a video clip or images for rapid review and response. In addition, capturing visual documentation of daily site activity, incidents and near misses enables managers to assess compliance with safety requirements and monitor where workers, equipment and materials are in transit to identify potential safety issues. You can receive alerts for entry of restricted access zones and track the entry and exit of people on the jobsite."

Every contractor is going to have its own set of requirements. "Before you begin comparing solutions, it's important to first evaluate and understand your needs," says Roger Yarrow, COO, TrueLook. "There are many products and services that can help secure a site. Decide what is important for you. Do you need your site to be monitored by a live person or can you save resources and rely on cameras with 24/7 recording and motion alerts? It's been our experience that customers get the most bang for their buck with a combination of both traditional security measures — like fencing, good lighting, single monitored entry points, etc. — and technology like a camera solution."

Construction cameras often cost less than other methods of securing a project. "Construction cameras can serve as an affordable resource to add security to a jobsite," says Yarrow. "They are a great visual deterrent and usually less expensive than the fencing that most companies use on their sites. As technology goes, there is a wide range of solutions, so understanding what's most important for your site, your team and your owners will go a long way when you are ready to make a decision."

Real-time Security

Current camera technology provides actionable information in real time.

"In addition to meeting your traditional security requirements, intelligent monitoring and motion detection alerts make EarthCam cameras like a 24-hour on-site security guard," says Bill Sharp, senior vice president, product development and strategy, EarthCam. "Motion detection can be set in a given area to detect loitering, or send an alert when specific objects cross a perimeter. Radar detection with auto-tracking can also complement your camera surveillance systems by adding another layer of accuracy and reliability."

Camera technologies can serve as multipurpose solutions, as well. "Early jobsite camera solutions were designed for a specific use,

like security or marketing,” says Burke. “Sensera Systems took a different approach in designing its cameras and SiteCloud software by providing a highly integrated, multi-application system.

“It’s important to know what you are trying to achieve on a given project for camera placement and configuring the system. But having a universal solution means that you can address all your needs across different projects over time,” she continues. “What is often neglected is the importance of camera placement. Sensera Systems’ compact solar/wireless solutions mean you can place cameras anywhere — no power or internet connection required.”

Seek out a solution that meets all of your needs. “Effective security teams use a combination of intelligent monitoring and recording,” says Sharp. “We advise teams to protect critical locations with the latest analytics, motion detection and night vision. These systems make remote, 24/7 protection of critical infrastructure much easier, allowing continuous observation and providing real-time status updates for an entire project site.”

The system should be customizable for your unique requirements. “EarthCam creates camera solutions which allow security teams to define visual motion detection areas, with ‘include/exclude’ options,” says Sharp. “Motion alerts can automatically be sent to your 24/7 Central Station Monitoring Service to dispatch emergency personnel as required.

“In addition, EarthCam’s artificial intelligence (AI) automatically tracks 19 different vehicle categories,” he notes. “A log is created so you know exactly where your vehicle is — or whether it has been taken — with photo verification. All this data is automatically sent to project management software, such as Procore. AI also can enhance site safety by monitoring occupancy numbers, visualizing density and social distancing.”

TrueLook cameras are “smart” in that they use onboard analytics to analyze what they are capturing. “Basically, the camera is watching the video stream for you, tracking for persons or vehicles moving across its field of view. These events are then reported back to our systems to be logged for later review or to trigger an immediate alert,” says Yarrow.

A camera that utilizes motion alerts should be customizable, as well. “Users should be able to go in and dictate the who, how, what and when of the alert,” says Yarrow. “For instance, with the TrueLook cameras, a user can go in and say ‘alert me by text and email when there is motion on the site between 6 p.m. and 7 a.m.’ If movement is detected on the jobsite within those parameters, that user will receive immediate notifications with a screen shot of what the camera saw. They can dismiss it or take the appropriate action, such as calling the police or security. It’s also important that if an incident does occur on the jobsite, that it is recorded and that the recording is easy to access and share.”

Cloud-based systems offer many benefits. “When selecting a jobsite [camera] solution, choose a cloud-based system that is easy to use, includes multi-site dashboards and is feature rich,” advises Burke. “This will ensure a higher level of user adoption, additional cameras can be added at any time and any software updates and new features are pushed to your system automatically.”

For reliability, Sensera recommends a solar-powered solution and cellular connectivity, with battery backup and the ability to plug into AC power for indoor use.

A good solution doesn’t have to be expensive. “There are several good solutions available today, the best of which will provide all of these features and capabilities without requiring

a la carte fees or expenses — simply the features you want, when you want them, as you scale,” notes Burke.

Beyond Security

Camera technology has progressed past a simple theft deterrent. There are now multi-tasking solutions that can help with virtually all aspects of the construction process.

“Our mission is to provide our customers with total jobsite visibility,” says Yarrow. “This doesn’t just mean logging in and seeing your jobsite — which is an incredibly valuable feature, particularly right now, when many people are still working remotely and/or on limited travel schedules.”

Construction camera solutions give project managers the ability to help manage, plan and document their jobsites. “It serves as an immediate way to quickly check in on things and track deliveries,” says Yarrow. “You can check any time to make sure safety procedures are being followed and, maybe most valuably, you can catch costly mistakes before they happen. As far as tracking progress goes, time lapse photography is an amazing way to document and share project progress.”

“The most innovative construction teams pick a true multi-tasking camera solution that can simultaneously handle jobsite monitoring, live streaming visualization and continuous security recording,” says Sharp. “Cameras such as EarthCam’s ConstructionCam XIR have a pan-tilt-zoom base, which is ideal for long-term tall/wide area projects and provides functionality beyond traditional security

tasks — for example, capturing time lapse videos.

“Most security solutions focus on one function: recording motion-triggered events. Trying to work from these auto-generated snippets of video can be frustrating,” he comments. “EarthCam users can quickly access the entire recorded video timeline and download concise clips of the footage they actually need, which is essential when responding to urgent on-site incidents.”

Current technology makes it easy to reduce the cost and complexity of self-managed solutions, empowering teams with high-quality imagery, on-site data and collaboration tools, all in one easy to use solution.

“As technology continues to evolve, it’s important to understand the full value of adoption,” says Burke. “Contractors can maximize their ROI by leveraging their jobsite monitoring solution for productivity, collaboration, security, risk and safety, and marketing.”

Secure Remote Jobsites and Equipment Yards

One common challenge contractors face is securing equipment in areas that lack power or internet.

EarthCam offers wireless solutions for project sites that do not have an internet connection at the camera location, staying connected with 4G LTE while keeping costs low. “Our wireless specialists create solutions with up-to-the minute technology which reduces costly IT expenses,” says Sharp.

EarthCam’s solar network camera system is an option for locations where power is not available on the jobsite. “This system has a fully integrated power supply to eliminate the expense of running power lines to each location,” says Sharp.

For short-term or unpowered jobsites where there is wireless capability, EarthCam offers Solstice Cam, a solar-powered camera designed for construction security. “It sets up in seconds, making it incredibly easy to use,” says Sharp. “A long-lasting battery and solar panel is included. Smart motion detection alerts help users react fast to potential threats and, with the Edge Video Recorder (EVR), Solstice Cam provides high-definition continuous recording. With up to 120 days of retention, the system is always capturing critical evidence. Encrypted storage ensures video footage is secured and recorded clips can easily be shared with others.”

Consider the core technology underlying a vendor’s solutions. “Some solutions are repackaged security cameras and are not designed specifically for the demands of construction,” says Burke. She notes that Sensera Systems solutions are designed from the ground up to be solar/battery powered, simple to deploy, easy to move and multifunctional for risk management and site security. They can be remotely managed, allowing 24/7 worry-free operation.

When choosing a solar camera solution, make sure it is designed specifically for that use. “When you add a solar ‘option’ to a security camera, you often end up with 100 lbs. of batteries and giant solar panels, making installation and relocation challenging,” says Burke. “Models that support both WiFi and 4G/LTE allow contractors to meet a variety of situations across their projects.”

All of the TrueLook solutions operate off 4G cellular for a completely turnkey experience. “This means they will work on a green site right when you are ready to break ground, rather than waiting for IT and other infrastructure to be set up,” says Yarrow. “Our cameras are pre-configured and ready to go for your job when they ship. When the end-user receives it, they simply mount the camera and connect it to a power source (whether that’s 110V or solar), and it’s online and ready to use.”

Cellular technology proves useful when there is questionable WiFi connectivity. “Sensera Systems solar-powered, cellular solutions are perfect for remote jobsites and reliable connectivity throughout the life of the project,” says Burke. “WiFi-only solutions are almost always problematic due to normal jobsite challenges such as consistent signal strength, bandwidth, continuous power and the movement of trailers and equipment.”

Look for Construction Experience

Make sure the people who supply the technology understand the demands of the construction industry.

“Many new technology companies are coming to market with software and hardware solutions, but few can offer the end-to-end installation, consultancy and robust support for the needs of large and small construction firms alike,” says Sharp.

Some companies have a long history of serving construction customers. “Based on this deep understanding of the clients’ needs, EarthCam provides concise recommendations for systems to fit within specific project budgets, meet future requirements and fully integrate with project management software,” says Sharp.

Don’t Skimp on Quality

Not all camera systems are built to withstand the demands of a construction jobsite.

Any professional jobsite camera should be robust enough to withstand severe weather. Avoid the cheap “big box” home use

multi-camera packs found at chains like Costco, Big Lots, etc., Burke advises. “Most jobsite cameras today perform extremely well even in the low-light conditions produced by inclement weather,” she adds.

For any use case, cameras that include low light capabilities can be useful for monitoring a jobsite 24/7, but many sites have no light. “To allow for monitoring 24/7, thermal imaging provides the ability to detect intruders in complete darkness,” says Burke. “For example, Sensera Systems’ Sitewatch PRO2 smart security cameras combine thermal, low-light and color cameras with video analytics and 4G LTE communications in one integrated system.”

EarthCam offers integrated night vision that makes surveillance possible even in complete darkness. “Systems automatically switch to night mode and provide long-range IR illumination, revealing night-time activity up to 600 ft. away, even in large open areas without lighting,” Sharp explains. “For uninterrupted security monitoring in all weather conditions, many EarthCam cameras feature thermostatically controlled, IP66/IP67-rated, environmentally sealed enclosures with stainless steel hardware and maintenance-free wipers.”

The available features and options differentiate the professional-grade cameras from the rest. “To get the best return on investment for jobsite security and surveillance, choose an advanced, easy to deploy security system engineered for continuous observation and recording,” says Sharp.

“Make sure the manufacturer has a long-established track record of serving the specific requirements of the construction industry,” says Sharp. “They should also have personnel who will come to the jobsite to do a site survey, pick the best camera locations for optimal site coverage and provide ongoing maintenance and advice. Services should provide essentials like live streaming and continuous recording, but should also offer options such as time-lapse videos at the end of the project to help you promote and document your work.”

Finally, make sure the system will meet tomorrow’s needs. Look for cameras that are easily scalable. “In the instance of TrueLook, the software and features are always the same — you can always add an additional camera,” says Yarrow.

He adds, “If you’re going with a camera solution, to maximize ROI, make sure to use the camera to its full potential. Lots of people want a camera for one purpose, whether that be security or to get the time-lapse videos. If you go with a camera solution that can be beneficial to multiple departments within your organization, share access with them.”