

# Today's **FACILITY MANAGER**

AUGUST 2010  
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## **ALSO IN THIS ISSUE**

**Selecting A Water  
Treatment Provider**  
page 16

**New Lighting Regulations**  
page 20

**Copper Theft A Costly Crime**  
page 38

## **Wireless Energy Makes Waves**

EnOcean technology takes  
building automation  
one step further with  
self-powered sensors.  
page 28



PHOTOS: THINKSTOCK; DESIGN: MEGAN KNIGHT, GROUP C ART DIRECTOR

By Keith Jentoft

A few hundred dollars worth of material often costs several thousands more to replace.

Facilities management (FM) is afflicted with a growing infection eating at the wiring, sucking at the plumbing, rupturing the HVAC, and suppressing fire control. The plague of copper theft is a facilities cancer destroying value and killing property—an epidemic in need of a cure.

Over the past five years copper prices have skyrocketed. While there was brief relief during the market crash, prices have again surged, driving the epidemic of copper theft cancer.

### Deceptive Price Tags

In the past few years, rising commodities prices created new challenges for facility managers (fms) and placed building infrastructure under new attacks. Most shocking to those who have not lived through an episode are the unbelievable repair costs relative to the value of the copper stolen.

It would be difficult to exaggerate the gap between the scrap prices thieves collect and what

management pays to rectify what vandals leave behind. The cost to repair a rooftop HVAC system hit by copper thieves for \$400 of cooling coils often is more than one hundred times the value of the copper.

The horror stories are everywhere—on television news, radio reports, and the local papers. Supermarkets, hospitals, and schools are shut down because thieves targeted their HVAC systems. Vacant offices and apartments are stripped of their wiring and left with a patchwork of holes in the drywall used to pull wiring from the studs. Sprinkler valves and fittings are disappearing, threatening safety and building code compliance.



PHOTO: GOOGLE IMAGES

Copper theft not only causes downtime related to affected equipment, but it is also quite costly to make necessary repairs and replacements.



### **“Do Not Enter” Does Not Matter**

In the past, the intrinsic value of wiring, plumbing, roofing, and HVAC didn't merit the labor required to steal it for scrap. Not anymore. Older buildings are especially vulnerable, as they are a virtual mine of copper pipes, copper wires, and copper gutters/flashing; all built when copper cost pennies a pound and needed no protection.

Spools of copper wire, new boilers, emergency generators, or uninstalled cooling systems have always needed protection during construction. Once they were installed, however, nobody worried about them. This has changed, and proactive firms are exploring ways to protect what is theirs and avoid the catastrophic costs associated with repairing copper theft.

The trouble is that normal burglary involves thieves stealing valuables contained in a building. With copper theft crooks steal the “building” itself, often without even entering the facility.

Traditional intrusion alarm systems are not designed to prevent the theft of gutters or HVAC units. The costs can be very high.

In January of this year, Jefferson County Public Schools near Louisville, KY had copper gutters taken from 14 schools. The local news, WLKY, reported the following: “The Jefferson County Public Schools executive director of facilities, Michael Mulheirn, said copper gutters and copper flashing started disappearing from school rooftops two months ago. ‘The worse thing that can happen is obviously we can get water into the building,’ said Mulheirn. ‘It can also, if you're not careful, it can get into the roofing system and insulation underneath, and that's when you can eventually end up with indoor air quality problems.’

“WLKY called several scrap yards around town to find out how much the thieves are getting for the stolen copper. The average was about \$2.85 per pound, but only about \$1.30 if it has tar on it. Mulheirn said the cost to fix the damage that's been done at all 14 schools will be \$100,000.”

Again, the cost to repair is orders of magnitude more than the value of the scrap as seen when thieves ransack rooftop HVAC systems. Ted Davis of

Oklahoma City had 18 rooftop HVAC units stolen from the roof of his business. He estimated the cost to repair the damage at between \$130,000 and \$140,000 while the value for the scrap aluminum and copper was about \$9,000. Obviously, this doesn't consider the cost of downtime.

The large cooling systems in supermarkets and hospitals are prime targets. A recent incident in California forced a large supermarket to close while new cooling units were installed and the roof was repaired. The cost of the actual repairs was \$250,000, but the cost of downtime and spoilage was even greater. Even without food freezers to worry about, in many parts of the country in the Sunbelt, losing air conditioning means closing the building until it is repaired.

### **Affordable Solutions**

Some firms are finding a solution to copper theft with video alarms designed for use outdoors. Video alarms are different from traditional surveillance systems and CCTV cameras that already are present in many facilities.

Surveillance systems typically use DVRs to record video from the surveillance cameras continuously for later review in the event of a problem. As any police officer will affirm, outdoor thieves are rarely identified with surveillance video recordings. The obvious flaw with recorded video is that by the time the problem is discovered, the crooks are long gone, and all that is left is an image of the back of their sweatshirt and the top of their baseball cap.

Video alarm systems are designed to detect intruders and notify police immediately, sending a 10 second video clip of what caused the alarm to a monitoring station for review and police dispatch. This means police respond to a crime in progress and can catch the crooks in the act.

One significant benefit of this approach is that police give priority response to video alarms. They support video alarms because they make more arrests. Because video alarm systems confirm the presence of an intruder, fms aren't saddled with increasing fines for false alarms, and police arrest the perpetrators.

In the May 2010 issue of *Sheriff* magazine, Larry Amerson, the incoming president of the National Sheriffs' Association stated, "We believe that the delivery of a video of the specific event that triggered the alarm is a tremendous improvement in alarm technology that will lead to a reduction in false alarms, saving valuable budget dollars."

### Vacant, But Not Empty

Vacant property presents a special set of problems. Protecting vacant property is a growing issue as copper theft threatens the integrity of the buildings themselves. Once the wiring or sprinkler systems have been damaged, everything must be brought back up to code before anything can be done with the property.

Vacant property often means that power, broadband, and/or phone is unavailable. Most importantly, securing vacant property often means investing



PHOTO: RSI VIDEO TECHNOLOGIES, INC.  
Motion viewing products, an integration of detector and camera, can be an effective tool to monitor activities on vacant facility sites. These are mounted in strategic vantage points and can be repositioned as needed.

money to install wires and cameras in a building that is going to be renovated or sold (which is often a losing proposition to be avoided).

Cordless/wireless video alarm systems change the game and are an affordable option to protect vacant property against copper theft. Aside from the fact that they still catch criminals in the act, these systems install instantly and can be moved as needed.

One example of how this can be implemented is a cordless motion viewer, which consists of a relatively small (about the size of a coffee cup) integrated detector/camera. This type of equipment can be placed on a tripod or attached to a surface with Velcro or magnetic mounts, so they can be reconfigured as needed or moved when the facility is sold.

### Case Study: Detroit Schools

One example of how effective video alarms can be happened recently in the Detroit Public Schools. Detroit closed many schools in 2009; some were scheduled for remodeling and others were being readied for sale.

A true surveillance system with wired CCTV cameras would have cost \$100,000 per site and required several days to install. This was impossible given the financial challenges of the Detroit school system.

Ultimately, Detroit opted to protect 30 buildings using cordless/wireless video security provided by a local integrator. These systems cost 5% of the surveillance systems and overcame the hur-



PHOTO: GOOGLE IMAGES  
Video alarm systems take traditional surveillance systems one step further. When an intruder is detected, a video alarm system can notify police and send a video clip to inform responders about what has occurred.

dle of affordability. A team of four people installed 30 systems in six days.

These "5% solutions" actually performed better than the \$100,000 systems in terms of arrests. In their first month of operation, September 2009, the systems assisted the police in making over 45 arrests. In the months following the total has grown to over 90.

Detroit has demonstrated that success is possible on a budget. Law enforcement officials strongly support the solution, and they are publicizing the arrests to send a message to the surrounding community: "Don't steal here, or we will catch you and prosecute to the fullest extent of the law."

Fortunately, with the help of video alarm technology, vacant and occupied buildings can now be secured on budget and protected from the cancer of copper theft without breaking the bank. 

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Read an online article from TFM's Facility-**Blog** that discusses copper theft instances and what some officials have done about it: <http://todaysfacilitymanager.com/facilityblog/2008/12/web-exclusive-fbi-report-indicates-copper-thefts-still-threaten-us-critical-infrastructure.html>.