



Hartford Steam Boiler



Risk Solutions

Case Study

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Church Mutual employs new HSB technology to prevent burst pipe and freeze damage

Advanced monitoring system reduces risk for houses of worship

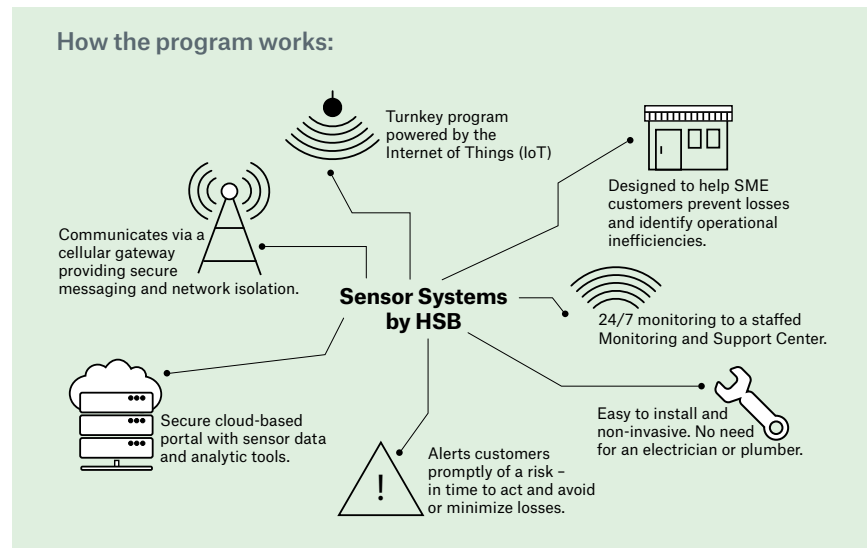
Millions of dollars saved through “virtual watchdog” technology

Many houses of worship are frequently empty. Since clergy and staff can't be in each building all the time, with some facilities empty for days, it's often impossible to detect potentially disruptive environmental threats, like pipe bursts or damage from severe weather.

The problem is significant, especially since severe weather incidents are increasing around the country. Nationally, for example, losses from winter storms spiked from \$2.1 billion in 2013 to \$3.6 billion in 2015. Church Mutual Insurance Company (CMIC) saw losses from pipe bursts more than triple in one year, from \$9.4 million in 2013 to \$34.4 million in 2014.

CMIC, partnering with Hartford Steam Boiler (HSB), is providing its customers with an innovative, 21st century approach to reducing these risks through the CM Sensor™ program, a new technology that is part of Internet of things (IoT) solutions for the insurance industry. By leveraging detailed data gained through sensors and local weather conditions, the program provides precise monitoring capabilities that can detect environmental changes and help to prevent freeze and water losses.

Since 2016, with more than 4,000 installations, the program has prevented an estimated \$8 million in losses for CMIC customers.



"Losses from severe weather can have a tremendous impact, especially on cost-constrained houses of worship, which rely on their facilities for services and community events," says Tom Kluxdal, CMIC's director of innovation. "But now we have a system that can go a long way to prevent losses and save facilities." As a result, CMIC has been recognized for its sensor technology program by the National Association of Mutual Insurance Companies and by Celent, a global research and advisory firm for the financial services industry.

Creating a customized solution

To create this customized and cost-effective commercial program for houses of worship of varying sizes and construction, CMIC partnered with HSB, which develops comprehensive IoT initiatives.

The commercial-grade sensor technology, a "virtual watchdog" system, is placed in strategic locations to monitor facilities 24/7. These sensors are easy to install, long lasting, never sleep and are always on watch for the presence of water, freezing temperatures, power outages, and more.

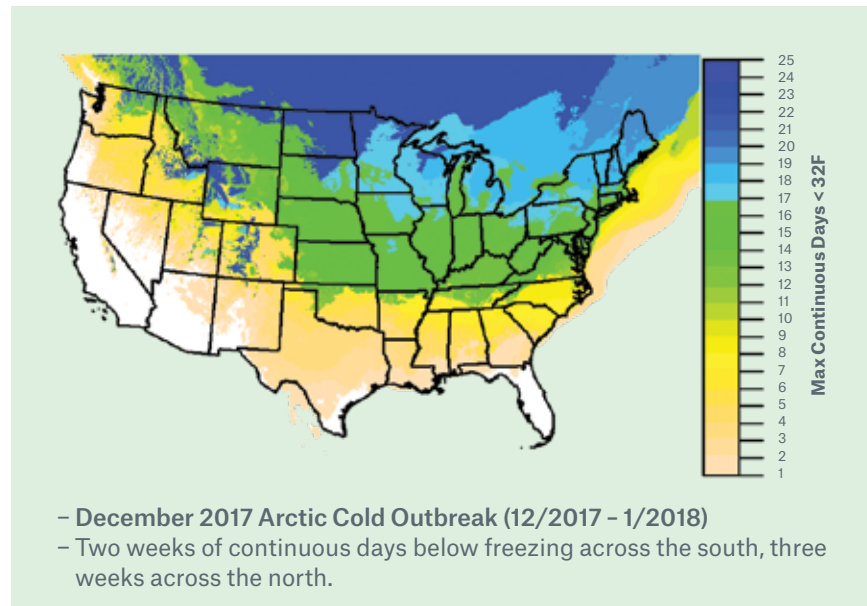
Responding before damage occurs

Alerts go out to a designated list of people before damage occurs (i.e., when temperatures get too low and action needs to be taken). Sensors report conditions through a cellular gateway, without interfering with, or reliance on, the customer's Wi-Fi network, which keeps messaging and data independent and secure. When a risk condition is detected, an alert is sent directly to sensor contacts through email, text or phone.

In addition, HSB's Monitoring and Service Center provides 24/7 service and technical expertise. HSB's engineering team performs testing, sets specifications, monitors alerts and communicates with customers on the ground to help resolve problems, should they arise.

This technology is particularly useful since weather patterns are changing around the country. Many of the southern and western states, like the Carolinas, Tennessee and Arizona, are experiencing unprecedented winter conditions, once typically found only in the north.

“Some areas of the country may not be used to such significant temperature drops, which may lead to increased claims,” says Jack Volinski, Senior Vice President, IoT. “Using our Location Risk Score, we were able to identify specific areas of greater risk based on CMIC’s claim data. For example, we found upper Tennessee to be a specific area that experienced greater loss, so CMIC implemented the program there first.”



“The innovative sensor technology that we are providing to our customers is a market differentiator in the house of worship property insurance space. We are the first commercial insurance carrier to offer this forward-leading technology,” continues Tom Kluxdal. “The sensors provide an active Risk Management tool to our customers to avoid or mitigate a loss, rather than just passive knowledge. With the 2018 polar vortex, we were able to assist our customers in reducing potential disruptions to their ministries and avoiding financial hardship. Overwhelmingly, our customers have voiced the value this modern technology brings to their facilities.”

CMIC losses prevented to date

Since the program began, the loss prevention has been significant, according to program data:

- 2014 pilot phase: 21 installations: client-estimated \$178,913 in prevented loss.
- 2015 scale phase: 220 installations: client-estimated \$250,443 in prevented loss.
- **October 2016 to date, full scale rollout 4,083 installations, client-estimated \$8 million in prevented loss.**

“If we had had something like Church Mutual’s sensor program a few years ago, a lot of damage and time lost could have been avoided,” says Paul Carlotto, Trustee, First United Methodist Church of North Andover in Massachusetts. “Anything we can use as a forewarning is a good thing. It is another tool I can use to reduce risk at our church. When Church Mutual came along with this program and offered it for free, it really was a no brainer.”

Providing a range of useful features

This sensor program has important core features already outlined such as the use of a separate cellular connection, risk assessment using the Location Risk Score, and HSB's monitoring and engineering services to assist customers.

Additional unique features include:

- Use of proprietary algorithms developed by HSB's engineering team to create quality and accurate alerts.
- Risk modeling to identify specific needs at targeted locations.
- A mobile responsive web-based portal that provides analytical tools and a historical and holistic view of data from all sensors and current conditions, especially for accounts with multiple locations.
- A proactive online customer support center, which not only answers calls but alerts clients about significant weather or equipment changes.
- Data analysis that provides insights to customers about such factors as heating, energy efficiency and behavior patterns. With the ability to track the temperature of a facility during different use periods, customers can adjust temperature settings and optimize energy costs.
- HSB's risk management and engineering expertise for assistance with workflow management and budget prioritization.
- A reliable battery back-up system so that sensors keep working to monitor conditions even if the power goes down.
- A customized mobile app so location managers don't have to be tied to a computer and can access facility conditions anytime, anywhere.
- Easy installation for do-it-yourselfers who can use an installation guide for sensor placement and activation without an electrician or plumber. Professional installation is available, if necessary.

Expanding future capabilities

With the data that can be gained and analyzed from this sensor system, customers will be able to improve future risk modeling. In addition to water and freeze sensors, IoT technology will be able to monitor other environmental concerns, like humidity and motion, to prevent losses, and vibration sensors will be able to predict when the technology may need servicing.

In the meantime, CMIC is planning to double the number of installations for its house of worship clients, as well as establish a pilot program for schools. CMIC is also looking into new business models so individual houses of worship can purchase additional sensors to expand their monitoring efforts.

About CMIC and HSB

Church Mutual Insurance Company, founded in 1897, offers specialized insurance for religious organizations of all denominations, as well as schools, camps, denominational offices and senior living facilities. Church Mutual markets most lines of commercial property and liability insurance, including multi-peril, workers' compensation and commercial auto insurance. In addition to insurance, Church Mutual provides a spectrum of value-added solutions that benefit its customers.

Hartford Steam Boiler (HSB), part of Munich Re, is a multi-line specialty insurer and provider of inspection, risk management and IoT technology services. HSB insurance offerings include equipment breakdown, cyber risk, specialty liability and other coverages. HSB blends its engineering expertise, technology and data to craft inventive insurance and service solutions for existing and emerging risks posed by technological change. Throughout its 150 year history HSB's mission has been to help clients prevent loss, advance sustainable use of energy and build deeper relationships that benefit business, public institutions and consumers.