

How Innovative Technology Is Changing Construction Risk Management

The construction and infrastructure industry is one of the most critical pieces of the world's economy. It is estimated that $10 trillion is spent every year on infrastructure development globally and McKinsey & Co., projects that figure will rise to $15 trillion by 2025. But the construction industry faces significant risk management hurdles from on-the-job injuries and physical damage to buildings caused by flooding and other disasters. In order to help mitigate these risks, developers, contractors and subcontractors are increasingly turning to the latest technology, including wearables and water leak detection tools.

WEARABLES

The use of wearable technology is one of the most efficient methods of risk mitigation in the construction industry. "The most important thing that we do as underwriters is help contractors work safely, and wearable technology can help enable this," said Toby Cushing, vice president of construction and construction property at The Hartford.

Many builders and contractors are starting to see a material return on investment from the use of this technology. Wearables mitigate risks and claims in a variety of ways:

- **Belts** can track ergonomics and movement. If a worker on a construction site has fallen, for example, the belt can detect the environmental conditions around them and prevent injuries.
- **Clips** can track who enters and leaves the job site, how long they are there, and what areas they are in. In a crisis, this information can help a client locate and get to their workers quickly and safely.
- **Vests** can monitor ergonomic movement, environmental conditions, air quality and noise. They can also track employees via geospatial positioning.
- **Gloves** can relay data regarding how workers are using their hands and wrists on the job. This is helpful since many workers experience hand injuries, especially those relating to repetitive motion. Clients can get real-time feedback about how often a worker is performing the same repetitive motion.
- **Armbands** can determine whether a worker is pushing or pulling repetitively or even whether a worker slips or falls, based on his or her arm motions.
- **Straps** can be worn around the chest or another body part and can monitor ergonomics and the environmental conditions surrounding a worker.

WATER LEAK DETECTION MONITORING

Water leaks in buildings and on construction sites can cause serious structural and financial damage. Modern technology can help prevent such catastrophes. For example, there is now technology available that can detect when water is flowing, when it is leaking and when pipes freeze. These monitors can also detect humidity levels and the amount of water flowing within pipes. Examination of that data enables contractors and builders to respond immediately and cut off the water if necessary to limit physical damage.

"The technology can send an email or text message within minutes or seconds after water starts flowing when it's not supposed to be" Cushing said. "Instead of 400,000 gallons of water flooding the building, it could be just a few gallons before an automatic shutoff valve closes during nighttime hours, or a text message triggers a security guard or supervisor to turn off the water."

Water monitoring technology allows the client to find and diagnose an issue quicker. From a contractor perspective, there is less employee time spent looking for and monitoring leaks.

The Hartford is using water monitoring technology to track losses from water leaks and damage to analyze how the company performs when it comes to mitigating such losses. "We've had pipe breakage and from a builder's risk perspective, to have a water leak when a building is 90% complete is the worst time and causes the most damage," Cushing said. "With water monitoring technology, instead of being a major loss, it's now minor."

THE BENEFITS OF TECHNOLOGY

Wearables and water monitoring technology can help developers and contractors prevent business interruption, lower energy bills, and reduce losses and out-of-pocket expenses. With such technology in place, construction projects become a much more insurable risk as employees and job sites are made safer.

The Hartford continues to innovate in this arena, especially when it comes to incorporating internet of things (IoT) technology to improve workplace safety and help prevent or reduce property damage for its customers. In 2019, the company announced the opening of its IoT Innovation Lab, which, among other things, uses various network-connected wearable and water-sensor technologies to generate real-time data to transform how businesses prevent or mitigate hazardous working conditions.

"The Hartford's IoT Innovation Lab significantly enhances underwriting and creates invaluable synergies between engineering and data science. By taking the information we receive from insurtech, including wearables and water monitoring technology, it enables us to more accurately and successfully predict, prevent and mitigate claims," Cushing said, adding that, ultimately, The Hartford's top priority when it works with clients is to ensure that they are able to send their employees home safely.

For more information, visit **TheHartford.com/construction**.

THE HARTFORD

The Hartford® is The Hartford Financial Services Group, Inc. and its property and casualty subsidiaries, including issuing company, Hartford Fire Insurance Company. Its headquarters is in Hartford, CT.