

Business and Technology Adoptions Transform Emerging Risk Profiles



RTLS tracking data pulled from sensors on worker PPEs can be used to automatically generate personalized safety performance reports.

“Today’s business strategies, technology, and project acquisition and completion are transforming the risk profile of construction companies,” notes Hank Harris, chairman of FMI Corp. and keynote speaker at the 36th IRMI Construction Risk Conference.

Along with continued positive growth, Harris sees the industry slowly returning to the total construction put-in-place numbers that were achieved prior to the recession. He adds, “While some predict an economic recession on the horizon, the chances are that it would have a relatively muted impact on the construction industry because most forms of construction have been undersupplied and underfunded.”

Harris also believes that the industry will continue to see a bifurcation of the market as a result of the influx of international engineering and

construction firms. “I don’t see any slowdown of this trend, especially with the continued emergence of megaprojects,” he says. “Most U.S. contractors are not equipped to handle

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**–Hank Harris,
Chairman, FMI Corp.**

mega or very large and complex public-private partnership project delivery solutions. They simply don’t have the people on the payroll with that kind

of experience and/or can’t afford the overhead.”

For a long time, there has been a movement to form design and construction firms much like the way industrial markets use the engineer-procure-construct model. He concludes, “For some firms, the risk model has been problematic, and the pendulum is beginning to swing in the other direction. One thing that will help across all companies large and small as well as engineers, architects and contractors is technology.”

Ann Hickman, CPCU, CRIS, ARM, editorial director for IRMI, agrees and points to the high number of technology-related topics at this year’s IRMI Conference. She adds, “Along with always-topical sessions such as risk transfer, liability, additional insured, workers’ compensation and wrap-

ups, this year's IRMI Conference also takes a close look at emerging trends and challenges related to technology adoption in construction and insurance."

Autonomous Operations

Robotic systems that range from semi-autonomous machines such as brick-laying machines to unmanned aerial vehicles (UAVs) continue to be a hot topic among contractors as well as brokers, insurance underwriters and surety bond providers.

Later in this section, Liberty Mutual subject-matter experts outline their best practices for managing the insurance implications of construction drones, while The Hartford risk engineers provide some risk management best practices when dealing with robotic solutions, such as semi-autonomous brick- or tile-laying machines.

Along with the use of automated systems on jobsites to gather data, track progress and inspect work, insurance companies are also using drones for claims investigations and underwriting purposes.

John (Jack) A. Dolan, PE, CBC, the eastern region construction division manager for Rimkus Consulting Group and host of a Toolbox Talk at the IRMI Conference, touts the use of other technologies, such as 3D laser scanning devices, thermal imaging, ground-penetrating radar and other devices, for cost-effectively analyzing buildings and subsurface site conditions.

Dolan notes, "Many property owners, contractors, risk managers, insurance professionals and attorneys may not realize that they can use these nondestructive methods to accurately identify and quantify potential moisture intrusion, construction deficiencies, maintenance issues, soil movement and related conditions instead of more traditional destructive evaluations."

Active Safety Alerts

In the interest of managing risk, many developers, researchers and contractors have been actively looking for ways to apply today's smart devices to improve jobsite safety.

Dr. Jochen Teizer with the RAPIDS Construction Safety and Technology Laboratory in Ettlingen, Germany, and others are using technology, such as BIM-enabled automated workspace visualization techniques, remote sensing and workspace modeling technologies, to eliminate hazards and accidents with predictive leading indicators. Another group is using spatiotemporal GPS real-time location tracking system (RTLS) data to automatically measure a hazard index on a heat map to automatically generate personalized safety performance reports.

James Benham, CEO of JBKnowledge Inc. and host of another IRMI Toolbox Talk, emphasizes the value of wearables, such as the Microsoft Hololens, Google Cardboard, Leap Motion and Myo armband, to help collect jobsite data, alert workers to hazardous conditions

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and monitor worker vitals, such as body temperature and heart rate.

Many technology advances are making their way onto jobsites at companies like engineering and construction firm Odebrecht. A Gary E. Bird Horizon Award finalist, Dwayne Jeffery, senior EHS transportation manager with Odebrecht, has put GoPro cameras, communication apps and work-zone intrusion alarms among other technologies to work to help keep his people safe on the job.

The GoPro cameras are used to check anticipated traffic patterns and traffic control in new work areas. Jeffery says, "We travel the intended route and then use a GoPro camera to film the traffic control path and ensure proper setup."

While working a road project,

the team relies on the Zello App, a smartphone-based technology, to communicate with each other. Jeffery explains, "Zello conversations are almost as fast as face-to-face conversations and faster than online communications, letting our project teams provide critical time-sensitive information for temporary traffic control."

Odebrecht believes it is also the first company in South Florida to use work-zone intrusion alarms—small traffic control devices attached to safety cones that emit a noise of 125 dB when struck by a motorist. Dwayne says, "These alarms alert both our workers and distracted or fatigued motorists about potential incidents."

Workforce Woes

One of the hottest topics covered at IRMI and throughout the industry is managing the emerging risks created by a changing workforce.

Shannon Lawless, team manager in construction risk engineering for XL Catlin and speaker at IRMI on workforce challenges, says, "Construction work takes its toll on the human body, which can force people out of the workforce sooner than they might otherwise in a less physically demanding line of work. We're seeing the same trend in the insurance world, as more retirements outpace the rate of Gen Y joining our workforce. That talent gap is hindering our ability to share industry knowledge and experience, too. It's one that needs to be addressed and filled quickly in order for our industries to profitably grow and flourish."

In this same vein, environmental health and safety professionals are uniting in a call to action about two

