



Customer success story

# Floorcloud lays the groundwork for construction innovation with Verizon's asset tracking solutions.

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**Scott Banda**  
Co-Founder and CEO  
Floorcloud



Contractors are under incredibly tight schedules. When they arrive at the jobsite, they have to immediately get to work. But, as professionals in the field know far too well, invisible climate factors can undermine their chances of success before, during or after they have installed their part of the project. If the temperature, humidity or dew point is too high or low, materials may fail to perform as expected. That could result in a poor-quality installation that frustrates the customer, requires an expensive do-over or even triggers a costly lawsuit.

In 2021, Scott Banda and his partner Patrick Mullins, both 25-year veterans of the building materials industry, came up with the idea of using Internet of Things (IoT) technology to proactively solve these recurring problems that create risk, compromise quality, delay construction projects and cost the industry billions of dollars. “About two years ago, we had a vision of a way to solve some of these construction industry problems,” recalled Banda, Floorcloud Co-Founder and CEO. “We knew that if we could find some sensors that would help us monitor site conditions in real time, we would be able to build a solution that would help contractors detect problems before they escalated.”

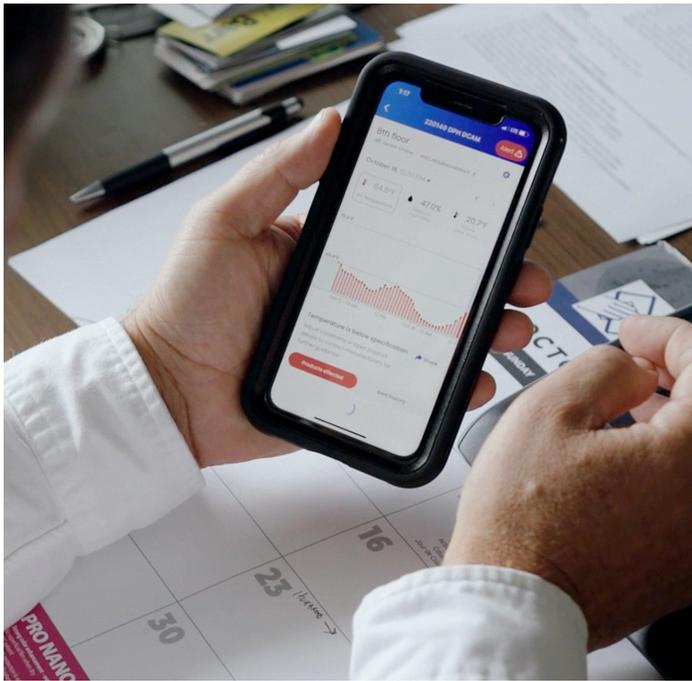
Their idea came to life as Floorcloud. Floorcloud is an innovative Internet of Things (IoT) quality management solution, custom-built for the building construction industry, and poised to make these common installation problems a thing of the past. To make their vision a reality, however, they needed the right IoT infrastructure.

## **When flooring fails, contracting engagements go awry**

Of all the various materials used to fit out a building’s interior, flooring comprises the vast majority of the square footage. In fact, flooring is often regarded as being responsible for 30% of a project’s problems though its only 3% of the budget. As a result, flooring was the most logical building trade for the company to pursue first.

To the untrained eye, flooring may seem uncomplicated. However, there’s far more involved in making sure that flooring is properly installed than the casual observer might assume. Flooring typically consists of multiple layers of materials working together as an integrated system that is notoriously sensitive to climate conditions. Contractors often have no way of knowing precisely what those conditions are until they arrive to begin their work.

For example, if a vinyl, rubber or hardwood flooring is installed after it has been exposed to temperature or humidity conditions that are considerably outside the manufacturer’s specifications, the floors may end up buckling, popping, gapping and even squeaking. When flooring doesn’t perform as expected, it can cause safety concerns for building occupants or disrupt daily business activities, often resulting in complicated troubleshooting, or worse yet, contentious legal disputes.



# An early warning detection solution mitigates jobsite risk

The solution that Banda and Mullins envisioned, Floorcloud, allows contractors to place IoT sensors at a jobsite and monitor the interior floorspace 24/7. These sensors collect near real-time data on climate conditions before the crew arrives to carry out its portion of the project. Floorcloud uses these IoT sensors to monitor ambient conditions like humidity, temperature and dew point. By way of a third-party integration, Floorcloud can also monitor the internal conditions of the concrete sub-floor itself. These metrics include crucial factors such as relative humidity—the moisture in a slab of concrete for example—and concrete slab temperatures.

As this early warning data is collected, Floorcloud compares this data against its proprietary, comprehensive database of more than 10,000 manufacturer product specifications. “Our software takes the reading from the sensor and sends it up through the network to the cloud, where we basically measure the onsite conditions relative to the manufacturer’s specifications. If things are out of spec, the user will get a push notification from our software, notifying them about the problem onsite,” explained Banda.

“That can be hundreds of thousands of dollars. In the case of a high-rise tower installation involving 300 units, or the wing of a hospital, you could even have a massive, multimillion-dollar lawsuit,” explained Banda.

Continuous monitoring of climate conditions on a jobsite in real time required a field superintendent or installation service manager to be onsite nearly 24 hours a day. That was not a viable approach to addressing the problem. Banda and Mullins envisioned an IoT-enabled, remote jobsite monitoring solution that could carry out the same objective. To make this work, they needed a reliable, national network that could deliver near real-time data. “Having that real-time data is critical to success,” Mullins commented.

Once notified of an emerging problem, a contractor is able to take the appropriate corrective action. “Commonly, they’ll take the data we generate in the form of graphs, and they send that off to their clients, with one click, who can objectively review the data and make more informed business decisions,” said Banda. With these early warning capabilities, everyone involved can better mitigate the risk associated with the climate conditions on a jobsite.

## Verizon Critical Asset Sensor solution



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**Steve Becht**  
President  
Pavilion Floors



## **Floorcloud’s ambitious vision requires a best-in-class IoT solution and network**

Banda and Mullins knew that reliable cellular IoT network connectivity would be essential to ensure real-time monitoring at the scale Floorcloud required. Initially, the Floorcloud team explored several different IoT networks. “The goal with launching our solution was to be able to say that we have a solution no matter where you are in North America. So we turned to Verizon, and we tested our sensors in various locations. We found the connectivity exceptional, even in some of the remote areas of the U.S. and Canada,” said Banda.

Floorcloud discovered that Verizon’s deep IoT expertise would prove to be strategically advantageous, as well. IoT solution development is an incredibly complex undertaking that includes remote device and lifecycle management. “We were able to help Floorcloud configure, update, provision and secure all of their devices over the Verizon network through our ThingSpace and Cloud Connector API platforms,” explained Kevin Fleming, Senior IoT Technology Product Manager at Verizon Business Group. “Our Verizon Asset Sensor offers Cloud Connectors API’s making it possible to integrate the sensor and sensor data with custom cloud applications like Floorcloud.” Equipped with a solution that bundles hardware, network connectivity and network management, Floorcloud was able to focus on building their software and expanding their business across multiple construction trades and with general contractors. “Floorcloud can focus on their customer, and we bring the IoT expertise and solutions to the table,” Fleming noted.

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**Kevin Fleming**  
Senior IoT Technology Product Manager  
Verizon Business Group

Among the assets Verizon brought to the table is an IoT sensor with long battery life that delivers high performance in harsh conditions. “Right now, we’re using one specific sensor. This is the workhorse of our line. It monitors ambient temperature, humidity, light, vibration, altitude and GPS location. It can also send out alerts,” explained Banda. “It is contractor grade in terms of its ability to be on jobsites. It’s IP67-Rated (with water and dust ingress protection), which is important for us because our environment can be dirty and dusty. This unit has proven to be robust in those kinds of spaces,” he added.

# A strong partnership results in better decision-making for the construction industry

From the beginning, Floorcloud and Verizon built a strong partnership that was foundational to success. Banda observed “the relationship with the Verizon team has been very personal. We know many members of the engineering and product teams. They are an extension of our engineering team.” In addition, because the IoT sensors were already FCC-certified, the Floorcloud team was able to focus on building their software applications and go to market faster than would otherwise have been possible. As a result, they were able to deliver a best-in-class solution to their customers. “All our user has to do is scan the QR code on the front of a sensor. They connect to the Verizon network, and our client is basically reading data within 30 minutes,” explained Banda.

An early Floorcloud client quickly saw the value. Consolidated Flooring, a third-generation, family-owned, full-service flooring contractor headquartered in New York City prides itself on high-quality work that earns client satisfaction with every contract. As an early beta tester, President and CEO David Meberg saw Floorcloud as a valuable tool for carrying out installation due diligence. “I knew right away that Floorcloud was going to be a success. The advantages with this product are second to none,” he said.

Given how slow the construction industry has traditionally been to embrace new technology, Floorcloud represents a significant advancement. “Habitually, the construction industry has been a late adopter. I would say that in some senses, we’re behind the curve,” explained Meberg. “Tools like this did not exist years ago. When we went out to the jobsites, we had to do our own record keeping or, worse, rely on other entities to do the record keeping and trust that it was valid. This piece of equipment can be utilized on any type of job or used by any type of contractor, regardless of size, to help protect their installation and the bottom line of their business.”

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**I would highly recommend working with Verizon. The engineering teams are available and personal attention is the norm.**

**Scott Banda**, Co-Founder and CEO, Floorcloud



## Floorcloud helps contractors keep projects running smoothly

Another early Floorcloud adopter was Pavilion Floors, a Diverzify Company. Pavilion Floors is a billion dollar flooring contractor with 60 locations across the United States. “We always try to be on the front edge of technology in the industry,” said Steve Becht, President of Pavilion Floors. “When Scott showed me the Floorcloud solution, I knew it would be something that we would be interested in to take our jobsite QC capabilities to the next level.”

Floorcloud immediately proved its value during a project in which Pavilion was tasked with installing rubber flooring that is very sensitive to environmental conditions. The Pavilion team had scheduled four installers to go to the site and start installing the flooring on a Monday morning. “Floorcloud will send push notifications to alert you that the jobsite is out of spec. Our project manager received notification on Sunday at noontime saying the temperature in the space was 45 degrees, which is way outside of the specifications,” Becht explained.

Upon receiving this notification, the Pavilion project manager called all of the installers and told them not to go to the job the next day. As Becht pointed out, “In a union market, you’re talking about paying a man well over \$100 an hour to go to a site. So, by not sending those guys there that first Monday morning, when we knew the site was out of spec, that probably saved us \$4,000.”

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**David Meberg**  
President and CEO  
Consolidated Flooring



The general contractor (GC) community has begun using Floorcloud, too. “They’ve seen it through many of their subcontractors, and they’re using it to monitor a lot of their interior trades, like millwork, painting, drywall, fireproofing, painting, wall coverings, and, of course, flooring,” said Banda. With all parties able to access the right data in real time, everyone can collaborate more effectively to enable project success. “The GC and building owner want product installed the right way from the beginning to secure manufacturer’s warranties, just like we do,” said Jim Lockwood, Productivity and Quality Manager at Consolidated Flooring.

### **An industry-changing IoT collaboration lays the groundwork for future growth**

Floorcloud has rapidly grown since its launch in 2022, having deployed nearly 1,000 sensors across the U.S. and Canada. What began as a solution for flooring contractors has quickly gained traction across the contracting industry. “When we built Floorcloud, we wanted it to be easily used by everyone from the smallest contractors to the largest contractors, regardless of their trade,” explained Banda. “The largest contractors that do commercial projects are the earliest adopters. We’re starting to see more residential contractors that do smaller, but still high-liability projects, come on board with us, as well.”

Floorcloud’s partnership with Verizon has enabled the company to quickly pioneer an innovative IoT solution for the construction industry as a whole. “I would highly recommend working with Verizon. The coverage in North America is exceptional, the engineering teams are available and personal attention is the norm. The devices that they’ve shown us are terrific, robust and reliable,” said Banda. Verizon’s Fleming added: “We actively listen and collaborate with our customers on feature enhancements that can be incorporated into future releases.”

Floorcloud has ambitious plans for the future. “We’re always asking for other new pieces of technology because we want to continue to build the business and offer new functionality,” said Banda. “We have devices in our development pipeline right now that are going to improve things from a battery life perspective and so on. Those devices will come out later in 2024.” With a bold vision and a strategic IoT partnership in place, Floorcloud has laid the groundwork to transform the construction industry.



**Hear from the Verizon and Floorcloud teams in this short video.**

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