Case Study: **Data Colocation Facility**

Form Meets Function
in Data Center

Project:

Data Colocation Facility

Las Vegas, NV

130

Aspiration FAAST 68-140

Intelligent FAAST aspirating smoke detection **meets performance, integration, and aesthetic needs** of leading data center and technology ecosystem provider.

For one of the world's most innovative data ecosystem providers, ensuring data security and continuity for its more than 500 large corporate and government customers is central to its business and brand. Its strategy must not only protect data and deliver constant system uptime and access for existing customers; it must also instill confidence in potential customers that it can provide them the same.

One of the main strategies this service provider uses to protect its customers' data is locating its data storage facilities in Las Vegas,

Nev., an area historically free from the risks of natural and man-made disasters that could potentially interrupt data service. Another approach is early warning smoke and fire detection.

For its fire systems, the data center provider has been working with Murphy Electric, a full-service Las Vegas electrical contractor and specialty fire alarm company, to provide fire protection for a 275,000 sq. ft. colocation server farm.

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In this facility, smoke can be the first indication of potential equipment failure, more serious system trouble, or fire – any of which can threaten system uptime and life safety. So beyond providing fire protection, the facility requires early warning of smoke to enable server farm personnel to address potential system issues before they become bigger problems.

The server farm's high concentration of electrical equipment creates a high heat-density environment, increasing the potential for smoke and fire. Cooling systems, such as CRAC units and above ceiling and below floor plenums, further complicate fire protection by creating a high-airflow environment that can disperse smoke and make detection more difficult.

and costly to design, program, and maintain."

Murphy Electric suggested using the new Fike FAAST Fire Alarm Aspiration Sensing Technology® (manufactured by System Sensor). The Fike FAAST device integrates directly with the Fike fire alarm panels with no extra hardware or software. "This customer is extremely hands on with their fire protection systems, so it needs to be very intuitive," says Northington. "There are too many moving parts with an HLI. The integration and simplicity of a single Fike platform convinced this customer to change from the previous device to FAAST. And the cost benefit in terms of installation and programming are evident with the intelligent FAAST device."

requires notification for several different parties." As a result, Murphy Electric pretested every sampling hole, sending 700 individual alarms to the fire panel for each device. The Fire Department then repeated the same testing procedure. "This system is used and abused," Northington continues. "Beyond the testing, this customer has so much construction taking place that the average FAAST unit might get reset 10-20 times a day, which shows just how robust FAAST is."

One final benefit of FAAST was the design and aesthetics of the FAAST device itself. "150-200 people a day tour this facility," explains Northington. "This customer takes the aesthetics of their facilities to a whole new level, things you

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—**Tim Northington,** Murphy Electric Project Manager

To overcome these detection challenges, Murphy Electric and its customer included high-sensitivity aspirating smoke detection to provide Early Warning Detection as part of its overall fire system design. Aspirating smoke detection uses a pipe network with sampling points that run into the protected space to actively draw air into a high-sensitivity smoke sensing chamber. This approach can overcome the smoke dispersion effects of high air flows. Pipe networks can also be run below the floor and above the ceiling to protect spaces that are not typically suited to traditional detection technologies as well as to hide the pipe network from view for aesthetic reasons.

"Aspirating smoke detection is not a new concept for this customer," says Tim Northington, Murphy Electric Project Manager, "But the competitive detector they have been using requires a separate high level interface (HLI) to talk to the Fike fire system we're using, which is cumbersome

The server farm includes four data sectors with four onsite tower rooms, and seven separate compartments for redundancy. FAAST units protect the data room, ceiling and floor plenums, and each power room. All FAAST units are connected to four networked Fike CyberCat Fire Alarm Control Panels.

In all, the facility requires 130 FAAST detectors with about 30 devices connected to each panel. Of the five alert levels available with FAAST, this system uses Action, Fire1 and Fire2. The FAAST device also includes 10 pre-Alert particulate levels – all of which enable facility personnel to take proactive action when even small amounts of smoke are detected to avoid system downtime or worse.

Northington notes that the robustness of the FAAST system was another benefit for this project. "The Clark County Fire Department and AHJ interpret current code to mean that each sampling hole must be tested for a Fire2 event, something that

would never think of, in order to impress potential customers and sell them services." For the server farm, the sleek, black FAAST device fit right in with the design of the facility. Beyond fitting in with the facility's look, FAAST's simple LED alert tree and its airflow pendulum enables facility personnel to know immediately what is going on with each detector.

Overall, the form, function, and integration of Fike's Intelligent FAAST system greatly simplified all aspects of the project. "It's easy to use, easy to understand, and easy to explain to the end-user," concludes Northington. "With intelligent FAAST, we were able to fulfill our vision for this facility."

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