The weather station that never sleeps

VAISALA

Case Study

The client:

World Trade Center Department of the Port Authority of New York and New Jersey

Vaisala solution:

Automatic Weather Station AWS310

Air Quality Transmitter AQT420

THE CHALLENGE:

Gain local weather data for Lower Manhattan

The World Trade Center is one of the most recognizable locations in the world, and one of the busiest transportation hubs in New York City.

The World Trade Center, and Lower Manhattan, experience weather conditions that can vary relative to the rest of New York City. The area can see blustery weather and other weather conditions that can fluctuate locally. The World Trade Center Department Operations Division monitors weather data through national channels, and had a vision to augment this data through local weather data collection at the World Trade Center. Customers and other stakeholders would benefit from the information to understand local conditions and prepare for any changes.

THE APPROACH:

Complete, hyperlocal weather insights

The World Trade Center Department team worked with Vaisala to create a state-of-the-art weather station to gather and disseminate a wide range of weather data regarding the Lower Manhattan area. Located at Liberty Park behind the America's Response Monument, the solution includes professional-grade sensors and technology for accurate, reliable weather data.

Combined with the Vaisala Air Quality Transmitter AQT420, the Vaisala Automatic Weather Station AWS310 bundles together all the essential weather and air quality observations, creates meteorological calculations and reports, displays real-time data, and saves history files for operational review.

The automated Vaisala Ceilometer CL51 BL measures the atmospheric mixing layer and cloud height, which the Center uses to understand and build precision simulations of existing conditions. Accurate wind speed and direction are provided by the Vaisala WINDCAP® Ultrasonic Wind Sensor WMT700.

The Vaisala FD71P Present Weather Sensor measures visibility, present weather and precipitation. Rounding out the solution is the Vaisala HUMICAP Humidity and Temperature Probe HMP155 which measures air temperature, dew point and relative humidity. Equipment is hardwired and the data is securely hosted through Vaisala's cloud solution services.

THE RESULTS:

Dependable data for greater resiliency

With its own unique weather center, the World Trade Center now has a wide range of weather data that can serve as a valuable resource for the community, researchers and weather-dependent operations such as local aviation.

In addition to helping the larger community, the data will help the World Trade Center to be even more resilient. For example, the Operations team actively monitors local wind conditions to help determine whether to secure exterior doors on campus; they also watch for local snow precipitation to prepare and mobilize for snow removal.

The team also tracks emergent weather conditions that may cause leaks or flooding. If heavy rain is expected in the area, they can prepare for potential leaks and may deploy flood protection systems around the campus.

Why Vaisala?

As the global leader in weather and environmental measurements, Vaisala empowers businesses and community leaders to build resilience to climate change and extreme weather events. Our 85+ years of expertise is grounded in science, innovation and our unwavering commitment to constantly evolving.

We boldly demonstrate that a culture of resilience and a connection to nature can create new ways of smarter, resilient living. We are champions for smarter, safer and more sustainable urban communities.

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