Building Analytics Success Story
Kerry, Inc.

In 2018, the facilities staff at Kerry, Inc. decided that they needed a better view into how their HVAC systems were operating at their 320,000 sq ft facility. Installing fault detection and diagnostics (FDD) software appealed to Kerry since their facilities team is small and there's not much time to review data in their building automation system (BAS). When they had time to review the BAS, they found systems that weren't in control and wasting energy or in need of repair.

The facilities team was planning to retrocommission (RCx) their building as they began learning about FDD and building analytics. They worked with their commissioning provider to roll those efforts together to achieve energy savings and get better data in the process. The team learned that installing FDD would help them find and correct these issues more efficiently than the manual methods they had been using.

The idea that the faults can be pushed to us instead of us needing to search for them convinced us to move forward with installing an FDD tool.

- James Swarthout, Facility Manager

What is FDD?
Fault Detection and Diagnostic (FDD) software identifies buildings with suboptimal performance by analyzing building automation system (BAS) data. FDD is one type of energy management and information system (EMIS).

Kerry, Inc. decided to install cloud-based FDD software to detect faults in their air handlers, chilled water and boiler systems, and VAV boxes. Additionally, they are adding whole building energy and water metering as well as twelve submeters so they can better understand where energy is consumed. Adding the FDD software was key to extracting usable information from their data and moving the organization towards a monitoring-based commissioning (MBCx) process.

Quick Facts

Location: Beloit, Wisconsin

Building type: Office, lab, manufacturing

Floor area with EMIS: 320,000 sq ft

Commissioning provider: Environmental Systems Design, Inc.

EMIS Tool: BuildPulse

FDD Use: During retrocommissioning and ongoing

Smart Energy Analytics Campaign: Recognition for New Installation of FDD

Kerry, Inc. was recognized by Lawrence Berkeley National Laboratory and the U.S. Dept. of Energy at the Building Commissioning Association Conference in October 2018 for their work to bring FDD into their operations.
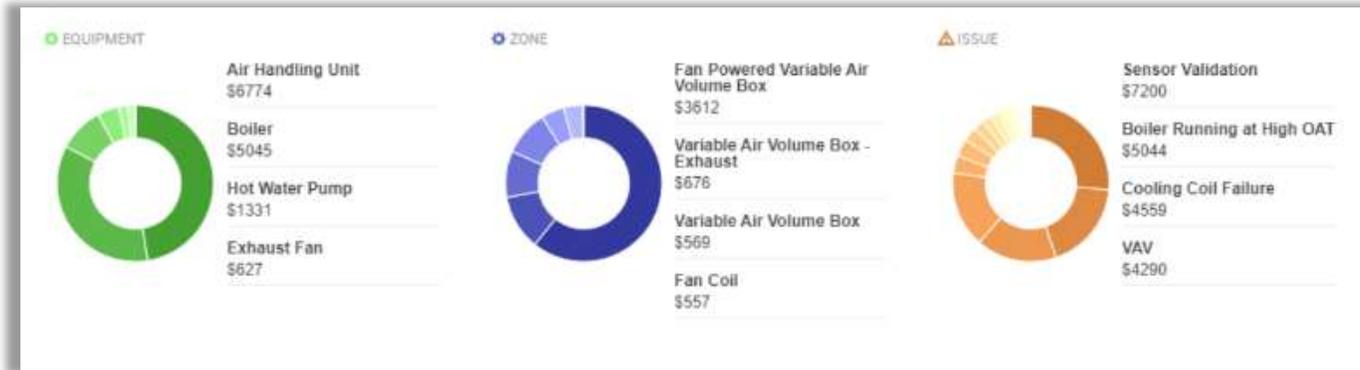
Kerry, Inc. uses the FDD summary dashboard to view faults detected at a glance (Source: BuildPulse)

Hidden Opportunities Show Value

Building analytics helps Kerry track savings in near real-time, instead of waiting for each monthly bill. Even though they have used FDD for less than a year, it has been helpful in directing them toward hidden opportunities with their mechanical systems. These issues had likely been occurring for months, but with the FDD tools, their staff saw them right away. It's typical for these kinds of issues to go undetected without the assistance of an FDD:

■ Stuck valves leading to simultaneous heating and cooling in the air handlers

■ Inefficient HVAC setpoints and schedules

■ Excessive VAV box minimum airflow

Initially, Kerry implemented small projects on an ad hoc basis to improve their efficiency, but since they began using FDD, they have been able to create a plan for long term energy conservation and efficiency improvement. Instead of a one-time project approach, they are using an iterative process to collect data, analyze and then implement.

So far they have tackled the 'low hanging fruit' which is not costly to correct and has the best payback. Kerry, Inc. uses their FDD summary dashboards to help them keep track of the big picture and prioritize the largest energy wasting issues (see figure above).

We have a small team on site and the faster we can find issues, the more quickly we can get them solved.

– James Swarthout, Facility Manager

Making the Business Case

Kerry, Inc. justified their RCx project based on the RCx savings alone. RCx has been demonstrated to be a highly cost-effective investment, with simple payback typically 2-4 years. Integrating FDD increased Kerry's overall RCx costs slightly but with significant long-term benefits. The FDD software was icing on the cake and will help them continue to maintain and find additional savings opportunities over time.

The Smart Energy Analytics Campaign is a public-private sector partnership program focused on commercially available Energy Management and Information Systems (EMIS) and monitoring-based commissioning practices. The campaign couples technical assistance with qualitative and quantitative data collection to inform research, development, and field study priorities. Partnering participants are encouraged to share their progress and may receive national recognition for implementations that demonstrate exemplary practices.