

ROCKLER HEADQUARTERS CASE STUDY

ENDING THERMOSTAT WARS AND SAVING ENERGY



You can tell when you walk in – the air just seems fresher. Since 75F made improvements in the system, I don't get any complaints. It's been 100% improvement.

Steve H. | Senior Designer



THE CHALLENGE

Founded in 1954, Rockler Woodworking & Hardware is a specialty store dedicated to bringing woodworking enthusiasts the latest technologies, while sustaining the natural resources which make the craft possible. It was no surprise they showcased the same level of commitment towards sustainable technology, seeking to provide the best working environment for employees at their Medina, Minnesota office headquarters. Facility Manager, Richard W., had two main challenges. First, employees working in the call center and art department frequently reported discomfort. These offices are served by a single RTU with four simple zone dampers. The existing zoning system was inadequate for wide ranges in load. The second challenge was energy waste. The existing zoning system required a bypass damper. However, according to a 2013 study by the California Statewide Codes and Standards Program, bypass dampers can waste as much as 26% energy. Rick was looking for a solution which would solve employee comfort issues without increasing their energy bill.

AT A GLANCE

Location	Medina, Minnesota
Project	Dynamic Airflow Balancing Outside Air Optimization
Square Footage	35,000 (total)
Rooftop Units	1
Average RTU Size	10 tons
Previous System	Honeywell Zone Control
Zones	32

Watch the video at 75f.io/casestudies

THE 75F SOLUTION

75F installed Dynamic Airflow Balancing and Outside Air Optimization to provide a balanced thermal environment and maximize energy savings.

DYNAMIC AIRFLOW BALANCING – 75F installed six Wireless Room Modules and 12 Smart Dampers throughout the building. Sensors take a snapshot each minute to build a vast empirical model which is analyzed using smart algorithms. Data is wirelessly transmitted back to smart dampers, which make proactive adjustments throughout the day to regulate temperature.

OUTSIDE AIR OPTIMIZATION – 75F provides Demand Control Ventilation (DCV) and enthalpy economizer solutions – strategies which optimize the use of outside air. Live data feeds measure outside enthalpy, while sensors in the building calculate indoor enthalpy. Using these readings, superior free cooling is provided when conditions are right, ensuring optimal air quality.

One of the benefits I really like is Facilisight, where I can go on the internet and look up our location. It will tell me exactly where my thermostats are set and I can see if we're running into any issues.

Richard W. | Facility Manager

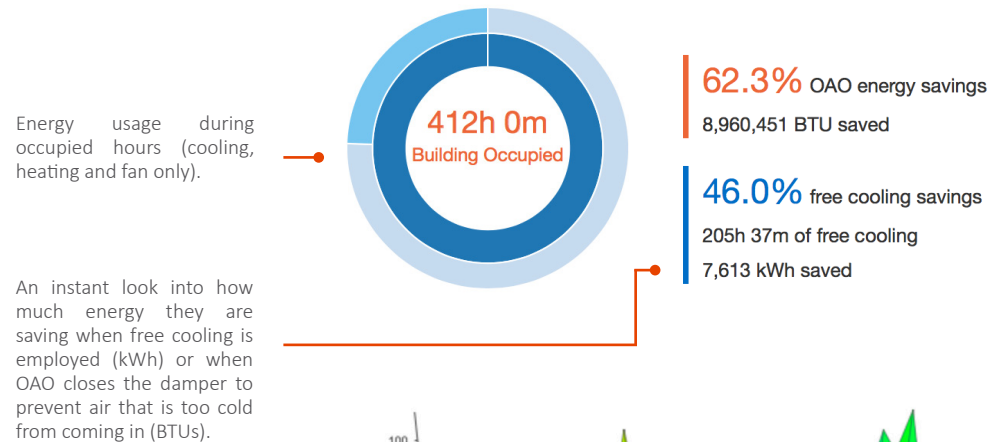


Figure 1: System performance overview. Light blue areas indicate when the system is using outside air for free cooling.

THE RESULT

Within 24 hours of installing the 75F system, Rockler employees reported a noticeable improvement in comfort. The building was being conditioned without human intervention thanks to the predictive power of 75F proprietary algorithms. Facilisight, a suite of web and mobile apps, confirms employee reports of increased comfort (Figure 1).

In addition to comfort, Rockler is enjoying 32% in energy savings! The Outside Air Optimization solution saves energy by closing dampers to prevent heat loss if indoor CO2 levels are healthy. Facilisight screenshots confirm energy savings (Figure 2). Both Rockler facility managers and employees are enjoying how the 75F solution drives efficiency while maximizing comfort.



An instant look into how much energy they are saving when free cooling is employed (kWh) or when OAO closes the damper to prevent air that is too cold from coming in (BTUs).

Visual graph of energy usage (including free cooling) created by plotting the run time, date and hour of the day.

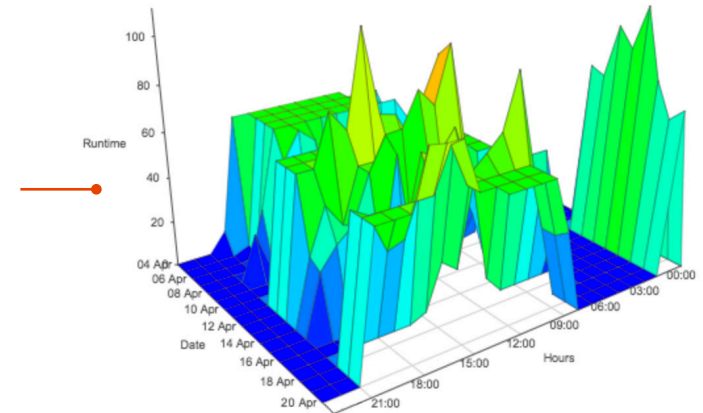


Figure 2. Energy insights from Facilisight online app.