

ECORITHM CASE STUDY - Time Equities, Inc.

True Analytics™ provides data-driven decision-making at Travelers Towers

“Ecorithm’s technology provides unparalleled insight into the operation of our facilities that was not possible before. Ecorithm’s intelligent analytics are helping us to understand and solve HVAC balancing issues and drive decision making as we implement new control strategies.”

Matthew Wallerstein
Construction and Asset Manager, Time Equities, Inc.



Travelers Towers I & II - Southfield, MI

Project Highlights

- Root cause analysis of major heating problems revealed cascading BAS controls issues - *and not critical design flaws* - as previously asserted by two consulting engineers.
- Correction of subtle high frequency boiler oscillations via BAS set-point tuning delivered \$1M of CAPEX cost avoidance from retro-commissioning recommendations.
- Annual energy savings of more than \$40,000 identified through low cost control strategy changes.

Automated, Root Cause Diagnostics Using Spectral Algorithms

The Ecorithm mobile app tracks root cause findings



A building engineer can drill down for measurement and verification (M&V).



ROOT CAUSE:
High frequency oscillations in HW valve position

CASCADING EFFECT:
High frequency oscillations in supply air temperature

END RESULT:
Oscillations in space temperature

High frequency oscillations in HW valve position cause energy waste, equipment wear and comfort issues.

Ecorithm’s True Analytics™ patented approach using physics-based pattern recognition algorithms identified systemic issues causing comfort and operational issues related to minute control sequences at the boiler plant.

Project Details

- 810,460 square foot mid-rise, commercial office towers
- Ecorithm’s True Analytics™ platform deployed during office renovations and commissioning of new building automation system (BAS)
- 5,000 total BAS points trended on 5 minute intervals
- Multi-tenant building with comfort, energy and sustainability objectives
- Complex systems to include: central BAS system tying two mid-rise commercial HVAC systems with individual central plants, chillers, boilers, air handling units, supply fans, rooftop units, variable air volume terminal units
- Building engineers use Ecorithm’s platform to communicate with controls and mechanical vendors
- Ecorithm delivers daily reporting of faults via web interface
- Monthly reports generated and reviewed with facility team

Time Equities, Inc. is a full service real estate firm with a portfolio of commercial and residential buildings totaling 22.1M square feet in 25 states, four Canadian provinces, and Germany. The Travelers Towers boast virtually uninterrupted window lines on all sides providing sweeping views of Southeast Michigan, including downtown Detroit, the Detroit River and neighboring Windsor in Ontario, Canada. Following the acquisition of Travelers Towers, Time Equities made major upgrades to the buildings’ infrastructure, including the boiler plants and building management systems.

Ecorithm is a leader in the application of advanced analytics to building operations. Ecorithm’s True Analytics™ platform helps clients all over the world to bring unprecedented visibility and understanding to complex, dynamic systems. Ecorithm’s core technology was originally developed for the optimization of jet engines.

