

ELEVATE PORTFOLIO PERFORMANCE WITH METASYS® ENTERPRISE OPTIMIZATION

A family of applications designed to help drive asset uptime, lower energy costs and increase productivity

Today's well-designed building automation systems produce a wealth of data, events and alerts that can be overwhelming. Stretched for time and short on resources, you frequently don't have the capacity to sift through volumes of data to identify critical, costly issues. Metasys Enterprise Optimization helps to rationalize and organize information so that you can more effectively optimize facility performance and efficiency across the enterprise.

BRINGING IT ALL TOGETHER IN ONE COMPREHENSIVE VIEW.

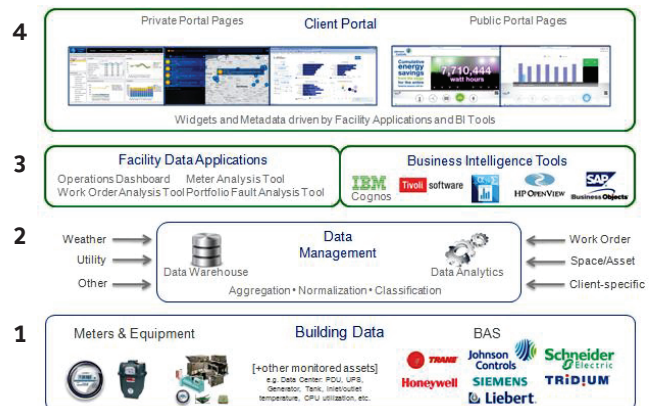
Metasys Enterprise Optimization is a family of dashboards, metering and workflow tools that combine to help you cut through the data clutter with clarity and insight. The applications aggregate and normalize data, analyze it based on standard and client-specific priorities, and then deliver it through visually rich and easy-to-understand maps, charts and graphs. Together, these tools give you an unprecedented view into the performance of your portfolios, allowing you to ensure asset uptime, lower energy costs, increase productivity and report return on investment. Metasys Enterprise Optimization applications combine to deliver value through a four-step process:

1. Gather. The applications are designed to integrate data from countless programs and systems including real estate, work order, energy spend, utilities use and building automation systems (BAS), including Johnson Controls Metasys and other BAS brands. From these various sources, standard data sets are gathered, along with any other customer-specific data that may be valuable based on the customer's goals and priorities.

2. Normalize. The data is then brought together in one place and normalized so it can be used by various applications across multiple vendors and types of devices. The full, normalized data set will then be analyzed to look for anomalies and potential problems, and to identify opportunities for improvement or optimization.

3. Deliver. The analyzed data is then delivered to two types of applications: Facility data applications and business intelligence tools. The facility data applications include dashboards and tools that will further analyze the data to uncover hidden insights, identify faults, prioritize them and allow building professionals to respond to events and alerts. By feeding the normalized data into business intelligence tools, organizations can track building performance against other business goals, such as measuring the amount of energy used per manufactured unit.

4. Visualize. Analyzed, prioritized data is only valuable if it can be easily interpreted. Metasys Enterprise Optimization applications translate data into visual cues that are displayed two ways: A public portal, also known as a "Green Kiosk", displays metrics on things like energy and water use in a way that can be easily understood by the general public. And private portal pages are used by facility staff to assess situations and respond to events and alerts.

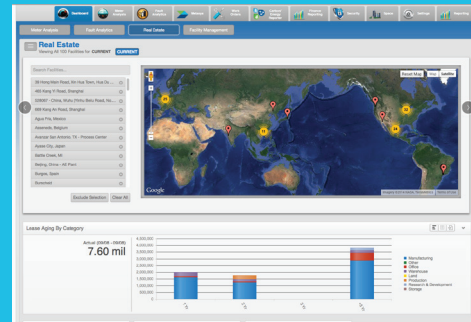


METASYS ENTERPRISE OPTIMIZATION APPLICATIONS

VIEW & ANALYZE PORTFOLIO PERFORMANCE IN REAL TIME

The **ENTERPRISE DASHBOARD** provides a map-based, high-level overview of your entire real estate portfolio, along with the ability to drill down to individual regions or facilities for more focused views of performance. With the Enterprise Dashboard, you can:

Navigate your way. What's intuitive for one user may not work well for another. On the Enterprise Dashboard, you can drill down to levels of detail using whatever method you prefer, from a scrolling list of facilities, a text search or by zooming in from a map of your real estate portfolio.

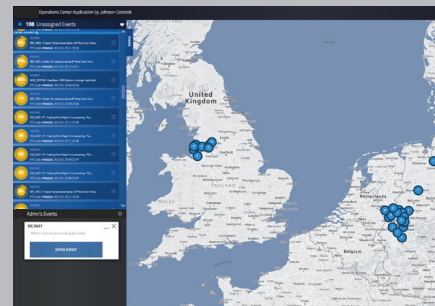


Easily identify key performance indicators. Across the vast sources of data being pulled into the dashboard, selected, key metrics can be aggregated for the entire portfolio. The data can be displayed as either graphics or text, and can be exported for use in spreadsheets or other third-party applications.

INCREASE PRODUCTIVITY WITH SIMPLE, EFFICIENT WORKFLOW

The **OPERATIONS DASHBOARD** is designed to help you cut through the clutter, by displaying information in a way that's relevant, meaningful and actionable. With it, you can:

Prioritize response. The Operations Dashboard organizes performance information in priority order so you can easily see which efforts will have the greatest impact tied to your specific goals, and with the least amount of hands-on effort.



Eliminate duplication of effort. On the Operations Dashboard, priority issues are placed atop a stack of event banners, allowing authorized operators to simply drag events from the stack and into their workspace. Once an operator has 'claimed' an event banner, that event is removed from the public stack, eliminating the conflict of multiple operators working on the same problem.

Take appropriate action. The Operations Dashboard offers a simple workflow to respond to events and alerts. It presents detailed information on the event, a work order history related to the event, and large decision buttons to Suppress (hide for now), Abandon (return it to the queue), or Create Work Order (act on it). The Create Work Order action is tied to a maintenance management system, such as Maximo, to automatically generate work orders in that system.



SHOW OFF YOUR EFFORTS TO FOSTER GOOD WILL AND FURTHER SUCCESS

Most people have no idea if the buildings they occupy are well run or highly inefficient. The **GREEN KIOSK DASHBOARD** is designed to help you spread the word about your sustainability efforts. The public-facing, dynamic display of real-time building performance highlights accomplishments that might otherwise go unnoticed by occupants and visitors. With it, you can:

Tell relatable story. The Green Kiosk displays metrics on things like energy and water use in a way that can be easily understood by the general public. For example, would occupants or visitors to your facility know what it means to reduce CO2 emissions by 24 tons in one week? They may have a greater appreciation for your efforts if the result – a reduction of 24 tons – was displayed with an interpretation such as, “That’s the equivalent of taking XX cars off the road.”

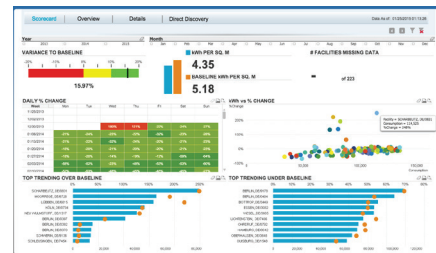


Foster good will and accelerate results. As you help occupants and visitors understand the impact of your efforts, they may be more likely to take pride in the facility and in the organization. Plus, by gaining a deeper appreciation of how buildings operate, they may be encouraged to adopt energy-saving habits on their own, which can lead to even greater efficiencies.

EXPOSE ANOMALIES AND INEFFICIENCIES

The **METER ANALYSIS TOOL** application includes a collection of visualization widgets to explore and uncover irregularities within energy and other metered utilities. Widgets include energy intensity, campus view, facility comparisons, utility-use heat map, and usage profiles mapped to calendar days. With the Meter Analysis Tool widgets, you can:

- Uncover anomalies.
- Incorporate weather data such as outside temperature and humidity.
- Explain past performance.
- Direct attention to areas of importance.
- Benchmark utility usage.



UNCOVER HIDDEN INSIGHTS WITH AUTOMATED ANALYTICS

The **FAULT ANALYSIS TOOL** is designed to help you proactively discover anomalies and equipment performance issues before they lead to alarms, occupant discomfort or even system failure. By taking a proactive approach to fault detection, you can operate buildings more efficiently and competitively. The Fault Analysis Tool automates detection of faults and other conditions of interest based on priorities you establish. With it, you can:

Customize rules. Rules can be configured to monitor and alert on faults or other conditions of interest in real time, 24/7, or can be applied to historical data to look for past events.

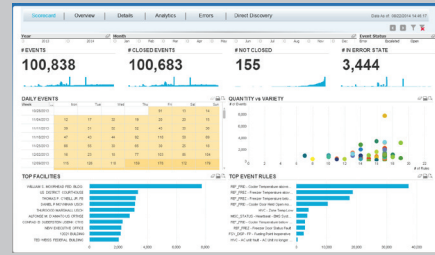
Minimize rule entry. Data from building management systems are automatically imported and grouped by system. A single rule definition can then be applied to a class of system, providing wide coverage with minimal effort.

Avoid costs. Critical events can be tagged for escalation and all events can be optionally monetized to focus priorities.

Analyze root causes. By analyzing the frequency of events and their escalation rates over time, the tool helps you gain insight into the overall performance of key systems and patterns of activity, which may provide clues to root causes.

Add analytics. New areas of interest can be added to the rule set over time, creating an even more powerful capability. And because they can be customized, the rules are aligned with the operational interests of each facility.

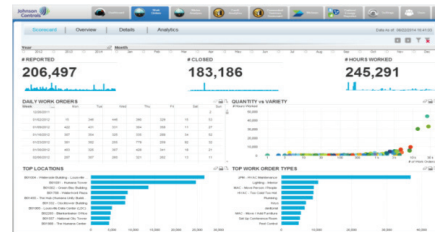
Expand surveillance. Initially, rules may be created to uncover problems and suggest root causes and remedies. Later, these same rules guard against reoccurrence of faults as equipment and systems age, or from previously unidentified causes.



The **WORK ORDER ANALYSIS TOOL** is designed to track the status of work orders generated through the Operations Dashboard.

With it, you can:

- View, at-a-glance, the number of work orders reported, closed and the total number of hours worked.
- Track work orders by day, type and location.
- Drill down to view the details of any metric.



GAIN UNPRECEDENTED VISION AND CONTROL

Metasys Enterprise Optimization offers a view of portfolio performance unmatched in the industry. With clarity and insight, the applications give facility professionals' unprecedented control over the operation of their portfolios, with easy-to-use tools designed to help them ensure asset uptime, lower energy costs, increase productivity and report return on investment.

For more information visit johnsoncontrols.com/metasys or talk to a Johnson Controls representative at (844) 883-1291.