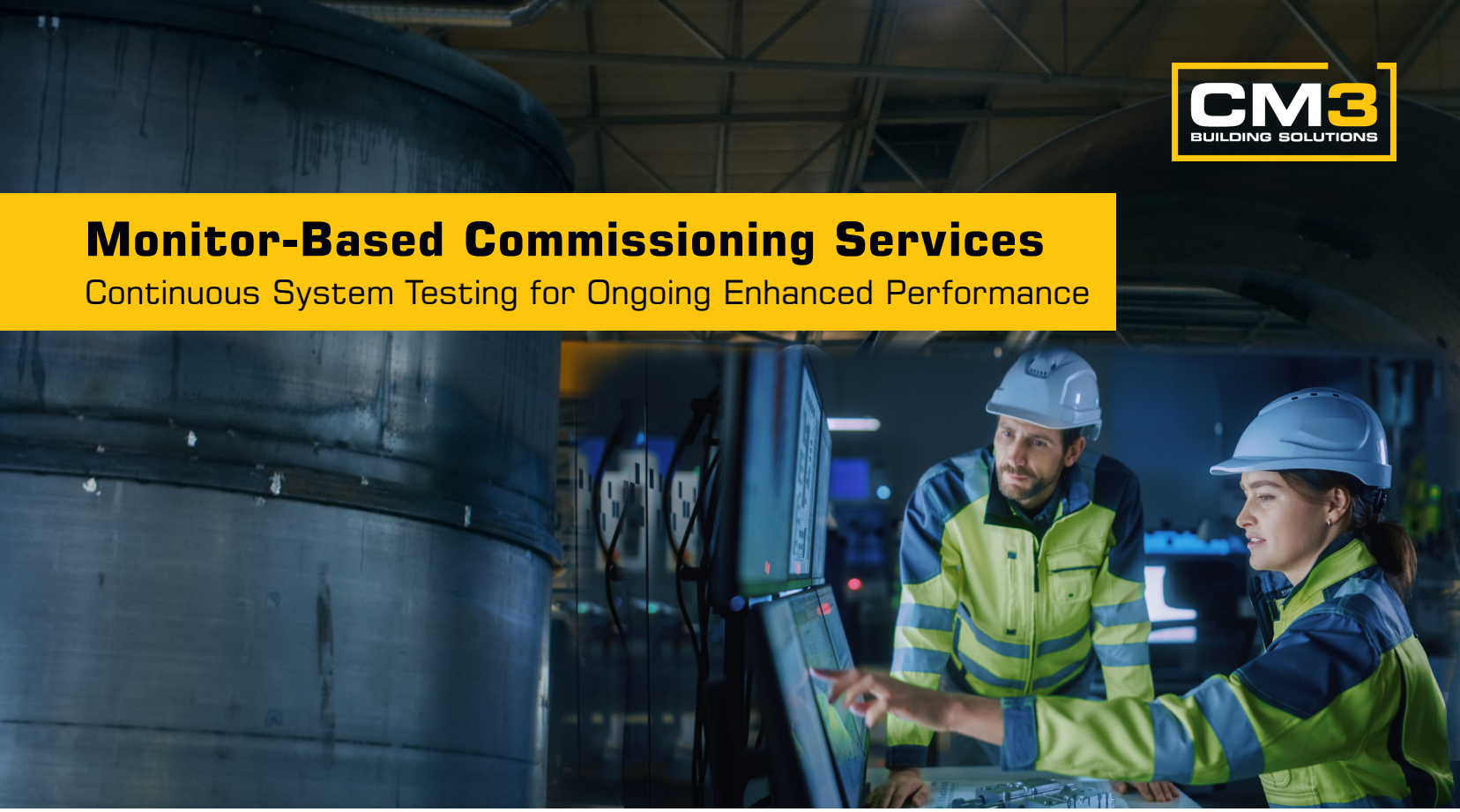
Monitor-Based Commissioning Services

Continuous System Testing for Ongoing Enhanced Performance



Across the energy landscape, it is buildings that can be a driving force in saving significant amounts of energy. Buildings use 75% of the country's power and 40% of its overall energy, resulting in 35% of the country's carbon emissions.

CM3 Building Solutions has been delivering energy solutions for more than 20 years. We offer a complete energy solutions portfolio, from preventative maintenance and retro-commissioning to monitor-based commissioning and performance contracting.

Through our monitor-based commissioning solution, we continuously apply the commissioning process to your building or energy system. This sophisticated, analytics platform combines building data from a wide variety of sources to better manage building performance and efficiency.

Our industry-leading, monitor-based commissioning (MBCx):

- delivers ongoing enhanced performance
- proactively identifies potential issues and repairs
- supports utility-based continuous commissioning initiatives

Our energy services also include

- Utility Rebate Identification
- Energy Modeling
- Financing Solutions

MBCx BENEFITS

- Identify energy savings opportunities
- Improve occupant comfort and productivity
- Continuous monitoring of all equipment 24/7/365
- Plan for and dispatch maintenance and repairs
- Gain visibility for capital planning
- Develop a gateway to machine learning and automated intelligence
- Optimize facility performance over time
- Avoid downtime and emergencies

COMPLETE TURNKEY IMPLEMENTATION

- System installation and data integration
- Custom configuration, dashboards, and reports
- End-user training
- Troubleshooting
- Performance reporting for utility programs

ROBUST BUILDING ANALYTICS

Our web-based MBCx program leverages a robust, building analytics engine to analyze data from virtually any data source and provide easily interpretable, actionable reports.

Developed by mechanical engineers and HVAC specialists, the system can be customized to execute specific tests, display dashboards, generate custom reports, and provide valuable feedback into other building systems.

- » Data prioritization and sorting
- » Able to access large amounts of historical and/or real-time data
- » Customizable algorithms can provide simulations and test for certain conditions
- » Access to all available data – no hidden or tiered data access limits

MORE THAN BUILDING AUTOMATION

The MBCx program goes far beyond what a building automation system or automatic fault detection device can do to deliver intelligent feedback that immediately alerts to deficiencies or system failures and proactively prevents them.

	Single-Point Data Detection	Multi-Point Data Detection	System Configuration & Testing	Proactive Communications
Building Automation System	✓	X	X	X
Automated Fault Detection & Diagnostics	✓	✓	✓	X
MBCx Analytics	✓	✓	✓	✓

FEATURE-RICH PLATFORM

Integrates with existing building automation and other third-party systems (i.e., service ticket and dispatch systems)

Records systems performance

Detects faults and energy efficiency issues

Generates actionable reports

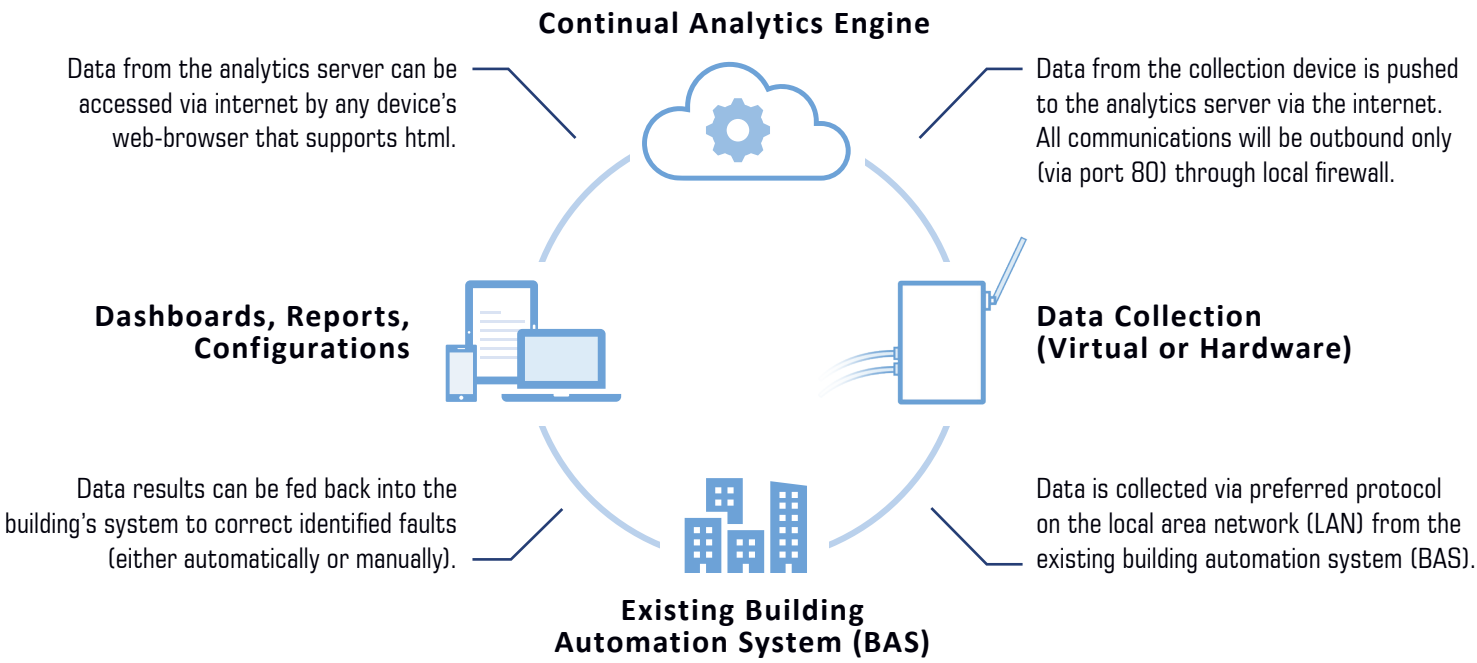
Qualifies energy impact and occupant comfort

CUSTOMIZABLE SYSTEM INTEGRATION

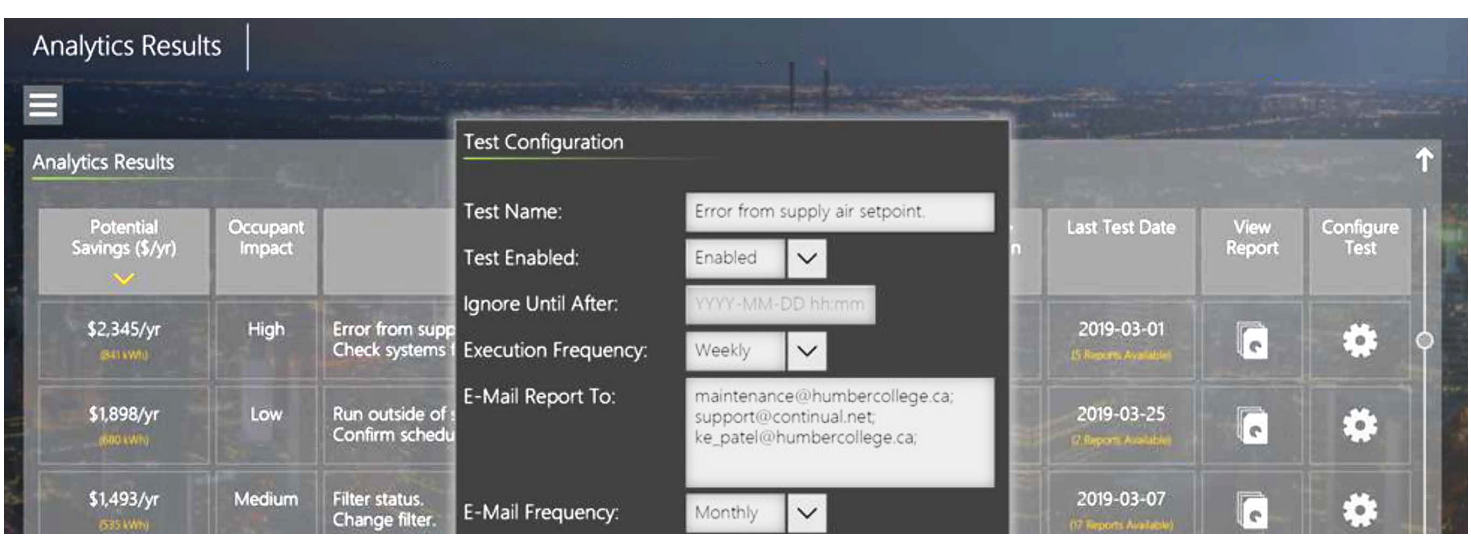
The MBCx platform works with any Niagara, BACnet or Modbus product, and our programmers can write integrations for any product with open API.

Existing work order management system integrations include AIM and Angus AnyWhere. The platform also integrates back into the Building Automation System.

CLOUD-BASED SYSTEM ARCHITECTURE



EASY TO UNDERSTAND DASHBOARDS



OUR MBCx SERVICES

Turnkey System Set-Up

- Analytics engine setup
- Name mapping [aliasing]
- Relationship mapping [hierarchies]
- Custom equipment performance tests
- Custom cloud-based analysis service
- Fault detection capabilities
- Energy impact summary
- Occupant comfort impact summary
- Fully customizable testing configuration
- On-site or cloud-based solution with email reporting

Ongoing System Monitoring

Systems

- Test and inspection of all alarms for critical items
- Verification of point mapping
- Schedule review and adjustment
- Alarm and trend review
- Graphic review

Equipment

- Test network continuity
- Review onboard operating system function
- Firmware revisions and security patches
- Onsite / offsite data backups
- System maintenance and updates

Reporting

- Provide .CSV report of all controllers and devices evaluated
- Provide corrective action for system deficiencies

TYPES OF COMMISSIONING

Commissioning (Cx)
Designed for a newly constructed building or major building addition. Applied from project inception to initial occupancy.

Retro-commissioning (RCx)
Applied to buildings that have not been commissioned or have been modified without additional commissioning.
A starting point for the building improvement process.
All building systems are baselined for their performance.

Re-commissioning
Applied to buildings that have already been commissioned.
A process that typically involves both testing and repairs.

Monitor-Based Commissioning (MBCx)
Advanced testing that uses AI-based technology to focus on building operations, energy performance, and end-user comfort. This approach can immediately alert to deficiencies and/or proactively prevent them.

COMMON PROBLEMS IDENTIFIED BY MONITOR-BASED COMMISSIONING

- Electric and gas meters with inefficient nighttime operation
- Simultaneous heating and cooling
- Excessive lighting
- Temperature sensors with faulty thermostats
- Improperly functioning VAV actuators on air dampers and hot water valves
- Non-delivery of chilled water
- Unnecessary chiller operation due to disabled chiller lockout
- Manual overrides (equipment/setpoints not modulating)
- Systems running outside of operating hours

LOCAL PROGRAMS

Philadelphia Building Energy Performance - Building Tune-Up Specialist
Philadelphia Electric Company (PECO) - Trade Ally
New Jersey Clean Energy - Trade Ally