



Authorized Dealer

Building Management Systems

Market segment
Recreational

Location
Tama, Iowa, United States

Total area
7,154 m² (77,000 ft²)

Project type
New construction

Protocol
BACnet

Installation type
HVAC

Meskwaki Nation Recreation Center

Project Profile

The [Meskwaki Nation](#) is Iowa's only federally recognized Indian tribe and the largest employer in Tama County, with more than 1,450 enrolled members and a settlement of approximately 8,600 acres. Through preservation initiatives, community and health services, and business opportunities, the people of the Meskwaki Nation are committed to protecting their culture, sovereignty, and quality of life for future generations. The new [Meskwaki Nation Recreation Center](#) helps support community wellness, with a gym, field house, and spaces for day care, mixed use, and administration.



Authorized Dealer [Building Management Systems](#) installed a Reliable Controls automation system during construction of the Meskwaki Nation Recreation Center to provide a unified control system for this new community facility.

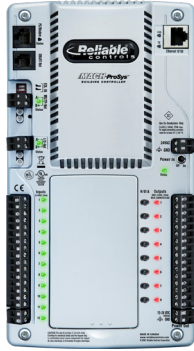
Total system objects
5,935

Integrated equipment
Aerco boiler, SMARTD chiller controllers

Installed equipment



42 MACH-ProAir™ controllers



10 MACH-ProSys™ controller



20 MACH-ProZone™ controllers



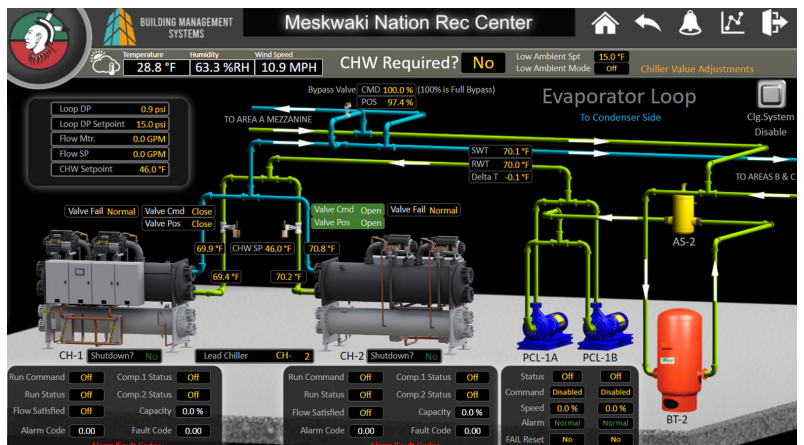
70 SMART-Sensor™ EPD devices

Building Management Systems used the power and flexibility of RC-Studio and RC-Toolkit software to integrate Reliable Controls hardware products with the recreation center's seven substantial air-handling units, each of which is equipped with hot water and chilled water coils that in turn supply hot water reheat variable air volume boxes. RC-Studio is an easy-to-learn, easy-to-use BACnet Advanced Operator Workstation software program that provides a customizable multiprotocol solution for database, alarming, scheduling, trending, and sequence of operation programming. For scalable system access and control, today facility managers use RC-WebView, a single sign-on browser-based building management solution that combines the power of enterprise tools with a simple interface.

RC-Toolkit and RC-RemoteAccess software allowed Building Management Systems to optimize network communications and simplify IT management for the center in a way that's scalable, secure, and affordable.

Building Management Systems implemented 10 MACH-ProSys BACnet Building Controllers with extensive networking capabilities and scalable inputs and outputs to control large mechanical equipment. Forty-two MACH-ProAir controllers provide variable air volume control with airflow sensors and onboard damper motors, eliminating the need for separate sensors and actuators.

For small to midsize rooftop equipment and mechanical room control, Building Management Systems installed 20 MACH-ProZone controllers, each a fully programmable BACnet Building Controller with highly scalable inputs and outputs. Seventy SMART-Sensor EPD devices allow facility occupants to take control of their personal environment at a glance.



Installed software



Throughout the project, the Building Management Systems team demonstrated resilience, adaptability, and a commitment to delivering reliable, efficient, sustainable system control. This project presented several challenges, each met with strategic solutions:

- **Complex integration:** Integrating Reliable Controls products with third-party boiler and chiller equipment was difficult because of differences in how third-party controllers communicate objects and data. Building Management Systems created a program to decrypt third-party numerical chiller alarm codes in a way that fully describes the alarms they represent.
- **Design changes:** Due to supply chain issues, several components of the HVAC system's initial design had to be changed during construction, presenting obstacles for all contractors. Building Management Systems advised on sequence of operation planning for new equipment and used the functionality of Reliable Controls to adjust control strategies to meet these changing needs.
- **Control object tuning:** Achieving desired environmental conditions while optimizing energy use demanded meticulous fine-tuning of setpoints and values. Building Management Systems completed a thorough analysis of the facility's thermal dynamics, allowing them to adjust setpoints with precision while striking a balance between occupant comfort and energy efficiency.
- **User adoption:** Introducing a new control system to facility staff required comprehensive training. Building Management Systems provided education, documentation, and ongoing support to ensure recreation staff were comfortable with and proficient at managing the Reliable Controls system.

Regulatory compliance: Building Management Systems navigated regulatory and compliance requirements by closely adhering to industry standards, collaborating with design engineers, and leveraging Reliable Controls features to align with industry best practices.

The Reliable Controls system provides Meskwaki Nation Recreation Center with a flexible, centralized platform for monitoring, controlling, and alarming HVAC equipment, helping promote targeted control strategies, energy efficiency, resource conservation, and demand-driven functionality now and in the future.

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