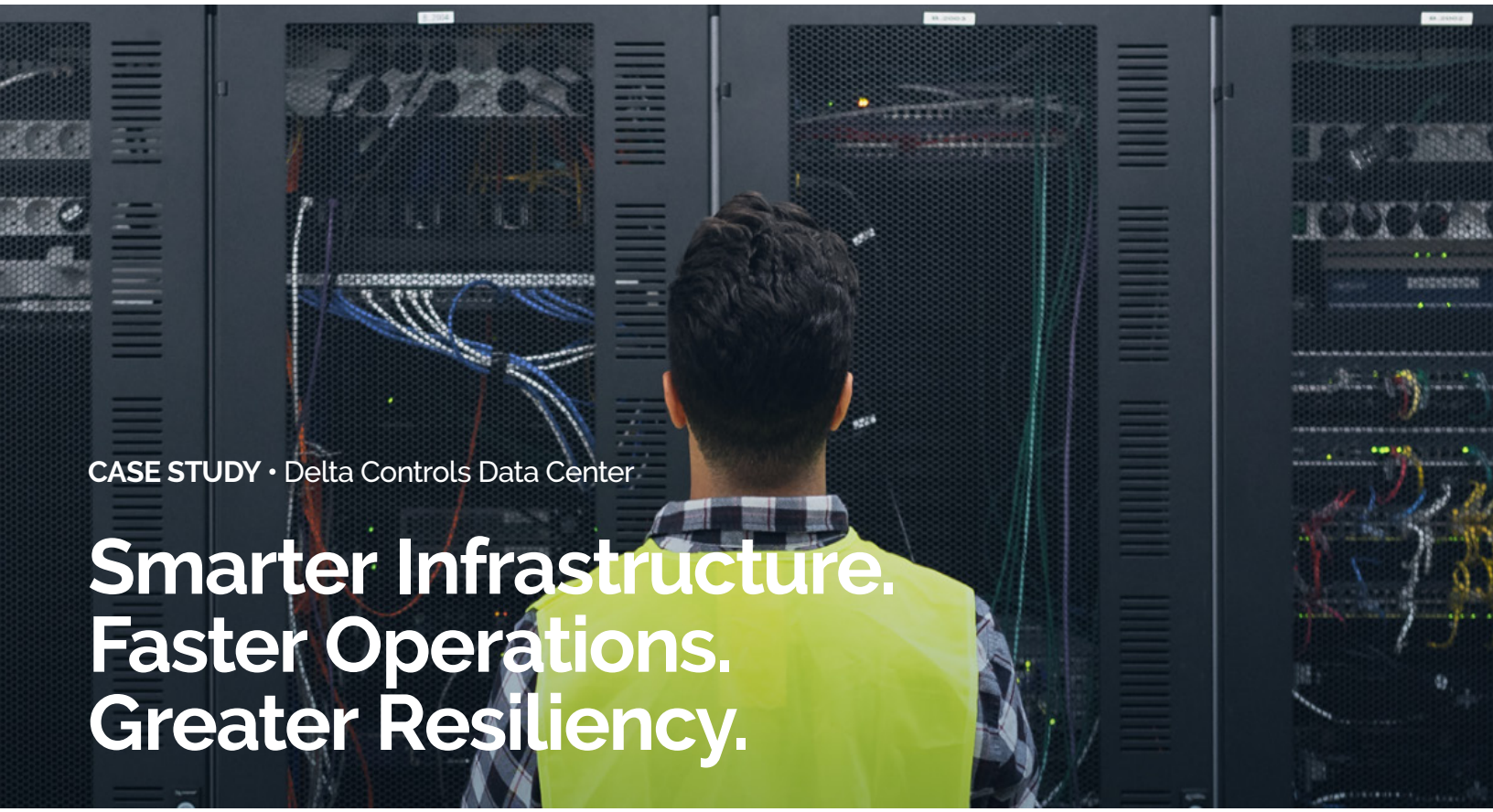
Delta Controls Headquarters
17850 56th Ave. Surrey, BC Canada
V3S 1C7 • 604 574 9444
deltacontrols.com



CASE STUDY • Delta Controls Data Center

Smarter Infrastructure. Faster Operations. Greater Resiliency.

The Challenge

Data centers operate under some of the world's most demanding conditions:

- **24/7 uptime requirements** with no tolerance for downtime.
- **Highly variable cooling loads** due to the fluctuating compute workloads of AI servers and HPC racks, spiking power and thermal demands unpredictably.
- **Complex mechanical systems** (chilled water plant, CRAHs, CDUs for direct to chip liquid cooling, etc.) that must be tightly synchronized.
- **Cybersecurity and compliance** requirements in regulated sectors.
- **Construction and retrofit speed,** where every week saved translates directly into faster ROI.

Operators need solutions that standardize deployment, optimize energy use, and provide transparent system-wide control without sacrificing operational resilience or security.

The Solution

Delta Controls delivers a holistic **Building Management and Electrical Power Monitoring System (BMS/EPMS)** specifically engineered for data centers and other mission-critical environments.

✓ Red5 Controllers

Modular, secure controllers with BACnet/SC support that coordinate the various water- and air-side mechanical systems serving data halls at scale. Onboard protocol drivers ensure that equipment supplied with embedded controls, such as CDU coolant distribution to AI servers and all upstream power equipment, can be integrated seamlessly. Built-in Python and Node-RED integration enable rapid customization for unique data hall requirements.

✓ enteliBUS Controllers

Delta's enteliBUS controller family, with its comprehensive range of I/O modules and embedded drivers, delivers robust, scalable control and monitoring for the most demanding areas of a data center – I/O points aggregated across the data hall served by large central water plants and air-side systems.

✓ enteliWEB Operational BMS & EPMS Platform

A centralized management interface that consolidates alarms, thermal load supervision, electrical power management and energy data across the site into a single-pane-of-glass user experience. Provides role-based access, electronic signatures, and secure reporting for operators and compliance teams.

✓ Pre-Configuration & Digital Twin Engineering

Using the Building Canvas cloud engineering platform, Delta Controls and its nationwide partners can pre-engineer, simulate, and test sequences of operation before hardware arrives onsite. This reduces commissioning timelines, minimizes errors, and accelerates speed-to-market.

✓ Cybersecurity by Design

In addition to complying with both ISO27001 and NIST 800-37 standards, Delta's BACnet/SC support and SOC 2–aligned development framework ensure that control networks remain protected from cyber intrusion—essential for cloud providers, financial institutions, and government data centers.

✓ Seamless Ecosystem Integration

Delta's open BACnet architecture integrates lighting, security, leak detection, and 3rd-party monitoring systems, mapping data from other standard protocols as needed, and ensuring all building services operate in concert for resilience and efficiency.

✓ O3 Sensor Hub

Multi-sensor technology providing real-time space data for temperature, occupancy, acoustics, and motion. This enables more granular control of white space conditions while supporting predictive maintenance strategies.

Outcomes

With Delta Controls BMS/EPMS, data centers benefit from:

01 **Reduced Commissioning Time** through standardized databases and pre-tested sequences, cutting significant time off deployment schedules.

02 **Optimized Cooling Performance** by dynamically matching cooling to IT load, eliminating overcooling, and reducing energy waste.

03 **Actionable Energy Insights** via real-time dashboards and reporting to support sustainability goals and ESG rebate programs.

04 **Scalable, Repeatable Standards** across multiple data halls and sites, simplifying training, operations, and support contracts.

05 **Increased Uptime & Reliability** by aligning HVAC systems and EPMS operation on a single secure platform.



Future-Ready Infrastructure

Delta Controls delivers future-ready infrastructure designed to keep pace with the exponential growth of the data center industry demands. By unifying building management, power monitoring, energy supervision and physical security into a single open-platform ecosystem, we ensure operators can seamlessly scale, integrate OEM systems, and maintain uptime without vendor lock-in.

Backed by the global strength of Delta Electronics, our solutions provide the resilience, efficiency, and sustainability required to power the next generation of AI-driven hyperscale, Colo and modular data centers.