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CASE STUDY
Access Control at United Data Center

Access Control in a Multi-Tenant Data Center, Data Holdings and United Systems:

Introduction

Owned and operated by the Forest County Potawatomi tribe, Data Holdings in Milwaukee is more than a data center, it's a testament to cultural values and forward-looking stewardship. Guided by the Potawatomi principle of planning for the next seven generations, the tribe envisioned a facility that would stand as a model of resilience, sustainability, and security.

This philosophy shaped every decision in the creation of Data Holdings: from the choice to build to LEED Gold standards, to the investment in solar fields, redundant power, & the use of non potable water for chilling and cooling infrastructure. And finally, to the design of an access control system that could evolve alongside the demands of tenants and regulators.



In over 11 years of continuous operation, Data Holdings has achieved what few facilities can claim:

- Zero downtime across its mission-critical systems.
- No physical security breaches or incidents.

Data Holdings and United Systems embarked on the access control update project with months of meticulous planning coming down to one very busy weekend to fully transition over a new Delta Controls Access Control System without any adverse effects to Data Holdings Clients.

Introduction

Data Holdings was purpose built to serve a diverse community of clients each with unique security policies and compliance requirements when it comes to renting space in the data halls. Unlike a private data center, this multi-tenant facility needed to provide segmented access and detailed audit trails, ensuring that each customer could trust that their data and equipment were fully protected.

- **Granularity of Access:** The system needed to provide tiered control, from building entries to cabinet and rack-level access, in order to support colocation clients with varying compliance requirements.
- **Critical Infrastructure Protection:** Redundant systems demand safeguards to ensure that human error could not compromise dual-feed resiliency.

- **Sequential Access Requirements:** Certain spaces, such as electrical rooms and the main lobby, required tightly controlled entry sequences (man-traps) to prevent simultaneous or unauthorized access.
- **Credential Management Simplicity:** The system needed to streamline the enrollment and deactivation process for a dynamic user base, enabling Data Holdings to maintain strict audit trails and meet rigorous regulatory compliance requirements.

At the same time, it was critical that the facility remained aligned with the tribe's long-term sustainability vision, integrating future-ready energy monitoring to ensure that every decision down to the kilowatt-hour could be accounted for and optimized.

The Solution – Red5 Access & enteliWEB Flexibility

Data Holdings, working with United Systems, chose Delta Controls' Red5 access control ecosystem combined with the enteliWEB supervision platform to address these challenges. The solution leveraged Delta's open BACnet foundation and programmable GCL logic, making it possible to deliver capabilities that most proprietary access control systems cannot match.

Key features of the deployment include:

- **Custom API Integration:** Using enteliWEB's flexibility, United Systems developed a custom API that connects directly into the other 3rd party technologies in the access platform, enabling powerful integrations and automations unique to the data center.

Biometric Security: TBS biometric readers were deployed for dual authentication, requiring both a badge and a fingerprint for access in critical areas. This dual-layer security ensures only verified personnel enter sensitive or customer specific zones. This can be used all the way down to the individual cabinet level as required.

- **Programmable Man-Traps:** GCL programming allowed for advanced man-trap logic:
    - In electrical rooms, if one side of the dual-redundant power room is open, the other is locked, ensuring no compromise to redundancy.
    - In the main lobby, the outer door must close fully before the inner door can open, creating an airlock-style barrier against unauthorized entry.
- **Autonomous Badge Management:** Internal staff now manage all badge creation, expiration, and revocation directly. This includes:
    - Streamlined biometric credentials with subsequent on-site badge printing.
    - Automatic credential expiration based on time of last usage per requirements of each data center customer.



- **Scalable Infrastructure:** The Red5 hardware architecture provides a modular foundation, allowing the facility to expand its access control system as new tenants, doors, or racks are added without disruption.

Results – Security and Autonomy Without Compromise

The implementation has transformed Data Holdings' security operations:

- **Continuing an Unbroken Track Record:** 11 years and counting of operation without downtime or physical security incidents
- **True Autonomy:** Data Holdings can now can manage credentials, permissions, and system logic without relying on vendors or fearing vendor lock in.
- **Tenant Confidence & Satisfaction:** Rack-level and cabinet-level security provide the highest assurance for colocation clients.
- **Resiliency in Design:** Redundant infrastructure is protected by man-trap logic that ensures no single human action can compromise system uptime.
- **Future-Proof Security:** Open protocols, biometric integration, and API flexibility guarantee the system can evolve with industry demands.

Sustainability and Future Plans

Security was only part of the story. True to the Potawatomi principle of planning for seven generations, Data Holdings also designed the facility with sustainability in mind. Already LEED Gold certified, the center is now working with United Systems to expand its energy monitoring capabilities.

The roadmap includes:

- **Rack and Branch Circuit-Level Metering:** Monitoring down to the rack level as well as the electrical branch level to increase energy visibility, identify consumption patterns and inefficiencies.
- **Tenant Energy Reporting:** Providing transparent reports for tenants to track their own usage and carbon footprint.

This next phase ensures the data center can continue to optimize efficiency and demonstrate leadership in sustainable operations.

Conclusion

Data Holdings demonstrates how tribal values, partner expertise, and open technology can come together to create a facility that is both secure and sustainable. By combining Delta Controls' Red5 access ecosystem with enteliWEB's programmability, United Systems delivered a solution that meets today's stringent security needs while laying the foundation for tomorrow's energy intelligence.

For the Forest County Potawatomi, this is not just about protecting data today, it's about building a data center that will serve generations to come.



About Delta Controls

At the forefront of building automation systems, Delta Intelligent Building Technologies provides global solutions through its network of Partners in 80+ countries. Focusing on innovation and sustainability has made the company industry leaders for over 40 years.

Delta Intelligent Building Technologies manufactures all products in Metro Vancouver, Canada, offering dependable, user-friendly control solutions for buildings in the commercial, healthcare, hospitality, education, and leisure markets. As part of Delta Electronics, Delta Intelligent Building Technologies is committed to leading building automation into a sustainable future.

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