

# Historical Office Building

Belying its historical façade, a state-of-the-art building automation system assures precise control, comfort and energy management.



## Case Study

### **Class A Office Building, Minneapolis, Minnesota:**

Gains precise control & increased safety.

Reduces annual energy costs.

Improves tenant comfort.

Decreases operational costs.



**ENERGY SAVERS, INC.**

GLOBAL PERSPECTIVES, ENGINEERED SOLUTIONS

*Whilst considering a recommendation to implement a DDC automation retrofit of its aging pneumatic control system, the building suffered a catastrophic failure precipitating 16,000 gallons of water to cascade from the upper levels into the street forcing immense tenant disruption & expense. Challenged to prevent future occurrences, reduce the energy impact from purchasing district energy chilled water and improve tenant comfort, the seemingly diverse goals were all accomplished.*

**Client Objective 1:  
Prevent future  
freeze damages.**

**Client Result:**

An innovative & unprecedented 4 levels of freeze protection were designed, allowing year-round cooling operation, saving labor and improving shoulder season space comfort.

**Client Objective 2:  
Reduce the impact of  
district cooling costs.**

**Client Result:**

While heating and cooling degree days (HDD & CDD) both increased, HDD By 20% & CDD by 68% and purchased chilled water costs increased by an incredible **238%** from the prior year the energy utilization efficiency improved considerably: (Btu's consumed per Degree Day) decreased substantially, **HDD by -12%** & **CDD by -38%**.



**Client Objective 3:  
Improve Tenant Satisfaction.**

**Client Result:**

By being able to operate in a cooling mode safely during the shoulder season when night-time freeze conditions prevail, and day-time temperatures are unseasonably warm, the tenants are more comfortable than ever.

**Client Objective 4:  
Decrease annual labor and  
operational expenses.**

**Client Result:**

By not having to drain and freeze protect the cooling coils both labor and material costs have been eliminated, while comfort complaint calls and manual HVAC adjustments have similarly dropped dramatically.

**Engineered Solutions:**

- \* Unique freeze protection strategy implemented for Air-Handling units on 5 floors.
- \* DDC control system retrofit designed providing for optimal control in all seasons.
- \* Complete HVAC systems analysis and recommissioning uncovered mechanical deficiencies, (excess leaking OA dampers) and contractor installation malpractice, (purposely damaged dampers precipitating original and consequential freeze damage).
- \* Pre and Post system installation energy profiling for all fuel sources.
- \* Measurement and verification of incremental improvements (calculation of percentage OA reductions) after installing low-leak dampers seals and correcting damaged or inoperable equipment.

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