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Case Study – Iron Mountain®

EDUCATION / HEALTH CARE / LODGING / MANUFACTURING / OFFICE BUILDING / RETAIL / SPECIAL



Carrier Evergreen® 23XRV Chillers Provide Efficient Cooling to Growing Data Center

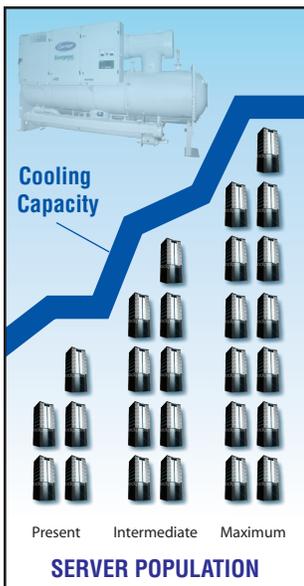
Project Objectives

Iron Mountain® operates a secure data storage facility, including a data center, in a former limestone mine in rural Pennsylvania. The data center maintains servers that provide secure information back-up for clients around the U.S. and internationally. In order to meet the precise cooling needs of the growing data center in an efficient manner, Iron Mountain needed a reliable chiller that could operate efficiently under part- or full-load conditions.

Solution

The Carrier Evergreen® 23XRV chiller with Foxfire™ compression technology features a variable speed drive that enables the unit to deliver impressive efficiency regardless of load. This allows the 23XRV to effectively “grow” with the data center’s server population, providing more cooling as more heat-producing servers are added. Also, the stellar performance of the Evergreen 23XRV chiller in fail-safe testing by an outside agency helped to secure the facility a top rating in the data center industry, providing peace of mind for Iron Mountain clients and a marketing advantage for the facility itself.

A variable speed drive allows the Evergreen 23XRV chiller to provide efficient cooling to the data center as the server population grows to maximum capacity.





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“The Evergreen® 23XRV chiller is an exceptional product. The efficiency has been even greater than we expected.”

—Chuck Doughty,
Vice President Engineering,
Iron Mountain®

Project Synopsis

Iron Mountain® operates a secure data storage facility, including a data center, in a former limestone mine in rural Pennsylvania. Individual storage units contain paper, magnetic media, film and microforms stored by organizations as diverse as multi-national corporations and government agencies. The facility serves 2,300 customers in the U.S. and four foreign nations. In addition to its individual storage facilities, Iron Mountain added a data center to maintain servers that provide secure electronic information back-up for clients. As in each individual storage unit, the data center was designed with its own self-contained cooling system and redundant electrical supply for the purposes of safety and reliability.

In order to meet the precise cooling needs of the growing data center in an efficient manner, and to obtain a top industry rating for their facility, Iron Mountain needed a reliable chiller that could operate efficiently under part- or full-load conditions. They installed two Carrier Evergreen® 23XRV chillers with Foxfire™ compression technology, a water-cooled screw chiller with a variable speed drive that enables the unit to deliver impressive efficiency regardless of load. The 23XRV chillers effectively “grow” with the data center’s server population, undertaking a greater cooling load as more and more heat-producing servers are added.

The Evergreen 23XRV chiller also played an important role in the data center’s quest to receive a top industry rating. The chillers’ stellar performance in fail-safe testing by an outside agency helped to secure the facility a “10” rating, the best in the data center industry.

Rich Benkowski, Commercial Sales Representative at Pittsburgh-based Standard Air and Light, commented, “The chillers performed beautifully in the testing. Under no circumstances did they fail. That contributed to Iron Mountain’s receiving a “10” rating.”

Since installation and fail-safe testing, facility staff at Iron Mountain have experienced ongoing satisfaction with the performance of the 23XRV chillers. Chuck Doughty, Vice President Engineering, said, “The Evergreen 23XRV chiller is an exceptional product. The efficiency has been even greater than we expected. We’ve been so pleased we’re planning to acquire two more 23XRV chillers in the near future.”

Project Summary

Location: Boyers, PA

Project Type: Retrofit

Building Age: 100+ years

Building Type/Size:
Former limestone mine converted to data storage facility.

Building Usage:
Secure data storage and growing data center “server farm.”

Unique Features: Data center operates 220 feet underground in a former limestone mine. Servers generate tremendous heat; as the server population in the data center grows, the Evergreen 23XRV chillers will respond with efficient cooling due to the chillers’ variable speed drive, which enables units to work efficiently under part- or full-load conditions.

Major Decision Drivers: Growing data center needed a chiller that could operate efficiently under present part-load conditions, and also operate efficiently at maximum load when the facility is completely populated with servers. Industry standards demand reliable Heating, Ventilation and Air Conditioning (HVAC) systems and redundant power sources.

HVAC Equipment:
Two Evergreen® 23XRV chillers with Foxfire™ compression technology.

Objective: Control environmental heat and humidity in underground data center facility. Provide reliable environmental conditions to help Iron Mountain ensure data center customers’ information is secure.

Nominal Cooling Tons: 750

Installation Date: August 2006

For more information, contact your nearest Carrier Representative, call 1.800.CARRIER or visit our web site at www.carrier.com