



5580 Enterprise Pkwy., Fort Myers, FL 33905
Office: (239) 694-0089 Fax: (239) 694-0031

Total Solution for all your Control Needs

Case Study

Richmond Tax Building

Richmond Virginia

Site Location:

Richmond Virginia

Concerns:

- Use of the building had changed from a Data Centre to a mixed office space Carrier units oversized for building which caused short cycling in the Spring and Fall seasons and compressor operating at unloaded conditions
- Each Carrier rated at 425 nominal tons
- Load calculation of space now at 180-200 ton

Possible Options

1. Upgrade and resize
 - Why upgrade vs replace with new?
 - Operating vs capital dollars
2. Overhaul the existing compressor
 - Continue short cycling and reduced life cycle of the compressor
 - Warranty on compressor
 - Problems with light load, oil return problems
 - Inefficient operation

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Equipment:

Carrier 19 XL

Steps Taken:

- Decision made to replace single compressor with two Hanbell screw compressors with VFDs, and control the chiller with MCS Controls.
- Eddy current of both was performed prior to start
- Both bundles sand blasted, painted, and the evaporator re-insulated

Results:

- Improve the unloading capacity up to 50% below existing levels, so the chiller stays on line longer and prevents chiller cycling.
- Improve chiller application part load value (APLV) by
- 10–25%, saving a significant amount of energy and, therefore, money.
- Improve drive efficiency and bring a near unity power factor across the operating range of the variable frequency drive.
- Enable customers to fully incorporate all energy saving routines available in their existing building automation system, due to compatibility.



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First unit completed



Control Upgrades Made

- *Hanbell Compressor with 3 years warranty*
- *MCS CONTROLS, proprietary application, easy integration with building management system, customizable, lasting support, Previously released MCS products (hardware and software) remain supported.*

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