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Case Study – Texas DOT

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



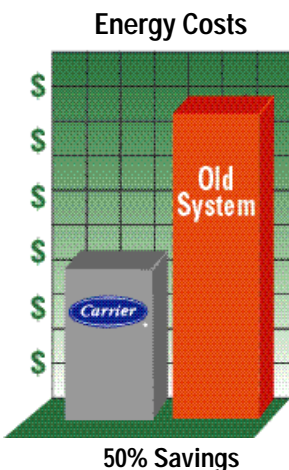
Carrier Ecologic™ Chiller Cuts Texas DOT Energy Costs by 50%

Project Objectives

When the air conditioning system at the Texas Department of Transportation's (DOT) Houston Annex broke down during a hot Houston summer, officials seized the opportunity to upgrade the HVAC equipment. They wanted equipment that could provide reliable, round-the-clock cooling under demanding conditions. In addition, they wanted equipment that was energy efficient, environmentally responsible, quiet and compatible with their existing Carrier Comfort Network® (CCN) controls.

Solution

Carrier's air-cooled Ecologic™ screw chiller, used in conjunction with existing CCN controls, helped the Texas DOT cut energy costs at the Houston annex in half. The four-story 35,000 sq. ft. building is noticeably cooler with the new equipment. The state agency was proud to be the first installation site in North America for the air-cooled Ecologic chiller, which uses environmentally responsible, chlorine-free refrigerant HFC-134a.



Carrier's Ecologic chiller, combined with existing CCN Controls, cut energy costs by an impressive 50%.



Case Study – Texas DOT continued

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Project Synopsis

The Houston district of the Texas DOT is the largest district in a large state – with the very large job of keeping traffic moving throughout the sprawling metropolis. Keeping its 300 employees cool, comfortable and productive in the city's hot climate is both a challenge and a necessity. So when the air conditioning system at the four-story 35,000 sq. ft. Houston annex broke down, officials immediately moved to upgrade the HVAC system. HVAC Mechanical set up a temporary system while preparations were made to install the new system. The facility team was looking for equipment that was reliable, efficient and environmentally responsible. And because the chiller pad sits outside the building's conference room, sound was a key consideration.

Proactive about environmental issues, the department chose Carrier's air-cooled Ecologic™ screw chiller, engineered from the ground up to use the chlorine-free refrigerant HFC-134a. The Ecologic features low-noise 06N twin-screw compressors and aeroacoustic fans, ensuring quiet operation and low vibration – reducing complaints from tenants and neighbors. Its compact design, with a footprint up to 50% smaller than most of the chillers it replaces, makes it easy for contractors to rig and set up.

Another decision driver was the fact that the chiller was compatible with Carrier Comfort Network® (CCN) controls, already installed at the Houston annex. The Ecologic chiller features cable-ready boards to make the connection easy. Much like the traffic alert systems used by the DOT to direct motorists to less congested roadways, CCN alerts the building manager to potential problems before they become big problems, helping to direct cooling where it's needed most. "This equipment helps us to save up to 50% on energy costs, key for a state government department intent on doing more for the taxpayers while saving them money," said O.D. Shelton, building manager for the Houston district of the Texas DOT.

Less than an hour after the Ecologic's start-up, the four-story building was noticeably cooler and the traffic engineering, road, and building maintenance personnel much happier. "When you combine the chlorine-free refrigerant, low sound levels, smaller footprint, controls compatibility and overall reliability, you have a 'can't miss' system," said Bruce Orcutt, systems sales consultant for Houston distributorship Automatic Equipment Sales. "It's a very impressive system."



"I've been in this business 40 years and I've always specified Carrier equipment for its reliability and service. I like the design of this chiller, the fact that it's very quiet, is compatible with our CCN controls and that we don't have to worry about refrigerant phase-out."

O.D. Shelton,
building manager,
Houston district,
Texas DOT

Project Summary

Location: Houston, TX

Building Age: 30+ Years

Project Type: Retrofit

Building Type/Size: Brick construction/Four-story, 35,000 sq. ft.

Building Usage: Offices, conference rooms

Objectives: Efficient, reliable, round-the-clock cooling under demanding Houston temperatures

Major Decision Drivers: Energy efficiency; sound; compatibility with existing CCN controls; eliminate worry of refrigerant phase-out

Design Considerations:

Chiller's compact footprint was half the size of the chiller it replaced, making it easy for contractors to rig and set up

Total Cooling (tons): 116

HVAC Equipment: Model 30GX Ecologic™ screw chiller

Unique Features: First air-cooled Ecologic chiller installed in North America

Project Cost Range: Less than \$100,000

Installation Date: Summer, 1996

Contractor: HVAC Mechanical, Inc.

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