



Oklahoma City, Oklahoma

## SANDRIDGE ENERGY, INC. CORPORATE HEADQUARTERS



### CHALLENGE

Replacing an outdated and inefficient heating and cooling system in a 36-year-old office tower

### SOLUTION

Mitsubishi Electric Variable Refrigerant Flow (VRF) technology

### RESULT

An aesthetically-pleasing and energy-efficient building on its way to achieving LEED® certification

SandRidge Energy, Inc. (NYSE: SD) is an independent energy company focused on the exploration and production of natural gas and crude oil. In July 2007, SandRidge purchased the 30-story former Kerr-McGee tower, a downtown Oklahoma City icon since 1973, to accommodate its rapid growth and find additional space for its 500+ employees.

The 36-year-old tower was in need of major modernization, so SandRidge hired Lingo Construction Services, an Oklahoma City general contractor, to remodel the 1970's interior spaces. For the HVAC system retrofit, The Benham Companies, Oklahoma City, provided mechanical design and engineering services. HVAC Contractor Wattie Wolf Co., Oklahoma City, provided the installation and commissioning of the system.

The perimeter of the building had an outdated 36-year-old HVAC system of "purchased" chilled water and steam that was inefficient and costly to operate. To cool/heat a single office after hours or on weekends involved engaging one-eighth of the entire perimeter offices. SandRidge looked for the most reliable and energy efficient HVAC technology that would

help provide credits for Leadership in Energy and Environmental Design (LEED)® certification.

The Benham Companies recommended Variable Refrigerant Flow (VRF) zoning systems from Mitsubishi Electric. VRF zoning systems take advantage of INVERTER technology to maximize individual comfort, indoor air quality and greatly reduce energy bills.

Research conducted by SandRidge made it clear that Mitsubishi Electric's VRF technology offered a higher return on investment compared to other conventional systems: the tower's present HVAC infrastructure permitted the re-use of existing vertical air ductwork to deliver needed outside air to the indoor units; existing vertical condensate drain lines made it easy to connect new horizontal drain lines to the existing system; there was plenty of room on the 30th floor mechanical penthouse for the Mitsubishi Electric R2-Series outdoor units servicing the top 12 floors; simultaneous cooling/heating of the tower's North-South, East-West perimeter exposure was made possible by the R2-Series system; and Mitsubishi Electric's advanced



controls network enabled SandRidge to manage the entire tower from a single networked PC, including operations, energy monitoring using Watt-hour meters, scheduling, tenant billing and maintenance diagnostics.

“We believe Mitsubishi Electric VRF zoning systems are the best equipment and technology available to replace our 30+ year old system. It will provide an aesthetically pleasing, modern and energy efficient environment for our employees for years to come, and will eventually help us achieve our LEED certification goals,” said Rick Brown, facilities manager.

The SandRidge installation has turned out to be the largest Mitsubishi Electric VRF installation in the U.S. Phase II is scheduled for completion in 2010.

## PROJECT TEAM

### HVAC Engineer:

The Benham Companies, LLC, Oklahoma City, Oklahoma

### HVAC Contractor:

Wattie Wolfe Company, Oklahoma City, Oklahoma

### General Contractor:

Lingo Construction Services, Oklahoma City, Oklahoma

## EQUIPMENT

- ▶ (52) PURY R2-Series Outdoor Units
- ▶ (340) PEFY Ceiling-concealed Indoor Units
- ▶ (9) G-50A Centralized Controllers with LonWorks® Interface