



Waxahachie Civic Center Central Plant Upgrade

Waxahachie, Texas



This 9 year old, 58,000 sf center had a history of HVAC problems and high electric utility bills. The central plant consisted of two, 200-ton, air cooled chillers located in a mechanical yard behind the center. This equipment was inefficient, noisy and unsightly. MD Engineering was commissioned to study replacement options for the chillers. The study included a comprehensive evaluation of the existing systems, including field testing. The resulting report projected an annual \$60,000 savings in energy costs, by replacing the existing equipment with magnetic bearing, water cooled chillers.

MD Engineering was then commissioned to proceed with the design of the retrofit systems. The new chiller plant design featured an enclosed plant with exterior cooling towers and a water side economizer. The plant was designed to be constructed in six phases in order to permit the convention center to remain in full operation. Additional chiller efficiency was obtained by installing two, 250-ton chillers so that at partial loading, they would operate more efficiently.

Oncor evaluated the new and existing chiller system and determined that the connected load of the system was reduced from 506.5 kW to 207.6 kW, a 59% reduction. Annual power consumption was projected to be reduced from 1,128,414 kWh to 523,075 kWh, a 54% reduction. As a result of their findings, **Oncor presented the City of Waxahachie with a \$93,000 rebate check, in recognition of their improved energy efficiency** as a part of their City Smart Program. MD will continue to monitor the Civic Center's power consumption to verify that actual savings remain on par with projected savings.



Before: Existing Chiller Plant



After: Enclosed Chiller Plant



Before: Chiller Yard



After: Chiller Yard

PROJECT DETAILS

PRIME CONSULTANT: MD Engineering - Plano, Texas

PROJECT TYPE: Municipal: Civic Center

PROJECT COST: \$1.2 million

SIZE: 58,000 sf

CONSTRUCTION TYPE: Study and New Construction

COMPLETION: 2009

PROJECT FEATURES: Energy efficient and environmentally friendly MEP equipment Center remained in operation during construction. City received \$93,000 incentive check from Oncor as part of CitySmart participant.