

City of Plano Fire Station – Plano, TX



An engine-driven natural gas heat pump, installed in a LEED Silver fire station, cuts annual energy costs by an estimated 43 percent.

- ▶ **Natural gas-fired heat pumps offer thermal efficiencies of up to 149 percent, opening the door to greatly reduced energy costs.**
- ▶ **Used for decades in Asia and Europe, natural gas heat pump technology is becoming popular in the U.S. due to its comfort, economy and sustainability benefits.**

“The natural gas heat pump is reducing annual energy costs by an estimated \$2,200.”

**– James Razinha,
Facilities Manager**

In a Comparison Test of HVAC Systems, a Natural Gas Heat Pump Is the Winner for the City of Plano

With two 6,900-square-foot, LEED Silver* fire stations located six miles apart, the City of Plano, Texas was in a unique position to test which type of heating and cooling system would work best for the city long term. And after nine months of side-by-side comparison, the 15-ton engine-driven natural gas-fired heat pump installed in Fire Station #13 outperformed the comparably-sized electric heat pump installed in Fire Station #12.

“We wanted to put both systems to the test,” says James Razinha, facilities manager, City of Plano. “Based on nine months’ of data, we’re anticipating estimated annual energy cost savings of more than \$2,200 with the natural gas heat pump. Although the natural gas unit cost a bit more, the investment should pay for itself in seven years.”

Heating and Cooling Delivered to Nine Separate Zones

An advantage of heat pumps is that they offer both heating and cooling by pumping hot air in or out, depending on the season and weather conditions. The NextAire natural gas heat pump installed in Fire Station #13 accomplishes that task more efficiently and at less cost than its electric counterpart. Using electronic controls and variable refrigerant flow (VRF) management, it independently heats and cools nine different zones in the fire station. “This offers excellent occupant comfort, while allowing the city to trim energy costs by heating or cooling areas only as needed,” says Greg Anderson, commercial marketing manager, Atmos Energy Corporation, Plano’s natural gas utility. “During the heating season, the unit also recovers waste heat from its own engine, putting it to use to increase overall efficiency.”



Natural Gas Heat Pump Delivers Other Benefits

Compared to the electric heat pump, the NextAire natural gas heat pump decreased peak electric demand at the Plano Fire Station by 18 kilowatts in nine months, helping to avoid high time-of-use charges. Because it uses single-phase power and results in decreased electric load, it also reduced the electric infrastructure required in the building and offers the opportunity to reduce the size of any emergency back-up generator needed for brownouts or power outages. The NextAire natural gas heat pump is environmentally friendly and uses ozone-friendly, chlorine-free, next-generation R-410A refrigerant. And at only 59 decibels, it is extremely quiet.

**LEED=Leadership in Energy and Environmental Design, a green building certification offered by the U.S. Green Building Council.*

In nine months' time, the natural gas heat pump reduced electric peak demand by an average of 18 kW.

– Greg Anderson,
Atmos Energy



Natural Gas... your BEST energy value!



Energy Solutions Center Inc.
400 N. Capitol Street, NW, 4th Floor
Washington, DC 20001

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City of Plano
1520 Avenue K
Plano, TX 75074
www.Plano.gov



Atmos Energy Corporation
P.O. Box 650205
Dallas, Texas 75265-0205
<http://www.atmosenergy.com>