

Village of Homewood

Department of Public Works
17755 S. Ashland Ave.
Homewood, IL 60430

Contact:
John Schaefer, Dir. of Public Works
708-206-3470

PROJECT COST \$1,546,000
CONSTRUCTION TIMELINE October 2011 - February 2012
TYPE Guaranteed Performance Contract
TERM 10-Year Term
GRANTS \$90,000 IL Clean Energy Geothermal / \$13,300 DCEO Incentive



The geothermal system well field is located under this section of the parking lot. The field has 24 wells that are 400 ft. deep.

Challenge

The Village of Homewood's 1967 Public Safety facility's HVAC system utilized a chiller and boiler plant that served individual air handling units and fan coils throughout the building. In addition to the system aging beyond its normal useful life, comfort was also an issue. The system was not able to provide proper ventilation throughout the building. If not addressed, this could lead to additional building problems such as mold or "Sick Building Syndrome." The Village had voted to make the needed improvements to the facility and set the following goals that the improvement project must accomplish:

1. Retrofit the 1967 Public Safety Building to meet set standards to optimize the Police and Fire Departments' ability to perform their responsibility of keeping the community safe;
2. Reduce energy costs to operate the building;
3. Reduce the carbon footprint left on the environment.

Solution

CTS reviewed and presented different options for the improvements. Ultimately, a geothermal heating and cooling system was selected as the most effective and cost efficient choice for the mechanical upgrades. The analysis showed that with the installation of a ground source geothermal heat pump system, the Village would realize roughly \$606,000 in savings over a 30 year life-cycle which included initial costs, energy costs and maintenance/replacement costs.

To help fund the project, CTS applied for and the Village received \$103,300 in grants.

Environmentally Responsible

By using the earth to heat or cool the building rather than fossil fuel, the Village of Homewood is reducing their carbon footprint on the environment. It is estimated that the geothermal system at the Public Safety Building will prevent 39 metric tons of CO₂ from entering the atmosphere each year. This has the following annual equivalents:

- CO2 emissions from 4,418 gallons of gasoline consumed
- CO2 emissions from 91.6 barrels of oil consumed
- CO2 emissions from the electricity of 4.9 homes for one year
- Carbon sequestered by 8.4 acres of pine forests

