

You may have noticed some digging lately out front of the town hall. That is the “loop field” for the new geothermal system for the Historic Town Hall. There is now about 600 feet of trenching in which plastic tubing has been placed, looped in flat spirals. The fluid in the tubing will conduct heat energy to and from the building and ground by the operation of a “heat pump,” the same technology used to pump heat out of your refrigerator. This is a ground-source heat pump. Air-source heat pumps work the same way, utilizing the heat content of air. These are increasingly common, partly because of innovations that enable them to work at very low air temperatures. Remember, it’s not the temperature of the ground or air that is being transferred, it’s the heat content.

We’ve been working for a couple of years now to make improvements to the heating/cooling system at the Historic Town Hall. Because they are less costly, we originally solicited bids for an air-source heat pump system. The proposals we received were not elegant, requiring multiple outside compressors mounted to, or alongside, the town hall. And they were fairly costly. So we moved our sights to a ground-source system. The heat pump is contained within the building, not exposed to the elements, and we knew we had a good situation for a ground-source system because the town office building has a geothermal system that has been working wonderfully. Ground-source heat pumps are also somewhat more efficient than air-source heat pumps, typically 3-5 times more efficient than electrical resistance heaters. Halco Energy was awarded that bid and is now installing our geothermal system.

There are several huge benefits of heating and cooling with heat pumps. *First, operational costs of heat pumps are very low.* Because they work by moving heat energy rather than generating it, they are extremely efficient, typically 3-5 times more efficient than electrical resistance heaters, resulting in around one-fourth the heating costs. *Second, heat pumps provide a pathway to renewably heating and cooling buildings, which now represents about 30% of our carbon footprint.* The source of heat is the sun’s heating of groundwater and the earth’s surface and the heat pump can be powered by renewably-sourced electricity. *Third, heat pumps provide for increased comfort.* Because heat-pumps can both heat and cool and the cooling cycle dehumidifies the air, they provide for year-round comfort for the building and its inhabitants. The new geothermal system will provide a better environment for visitors to our town meetings, the court, and the History Room, as well as the historic documents and artifacts.

This project is being supported by a \$30,000 grant from the New York State Office of Court Administration for which we are very grateful. The target date for completion of the project is early September. We look forward to a more comfortable town hall, lowering operational expenses, and moving one step further towards a renewable energy future.