

**Watchtower Bible and Tract Society of New York, Inc.
Category C: Construction Project
NYSERDA PON 4614**

Rockland County

Technical Lead:
Bard Rao + Athanas Consulting Engineers

Expected Construction Completion: 2030



V1 2/2025

The Site & Beneficiaries

The Watchtower Bible and Tract Society of New York, Inc. proposes to integrate a centralized heat pump system into a new fully electrified, carbon neutral Audio/Video Production Campus. The campus will comprise 1.7 million square feet of interconnected buildings, including 10 multifamily residential buildings with 1,200 full time residents, an event facility, an office building, an Audio Video Studio, a fitness center and visitor center. When completed, the project will be one of the largest geothermal projects in New York State with a borefield deeper than 500 feet. The project will monitor key metrics and serve as a case study demonstrating viability for other campuses in New York pursuing carbon free options.

Potential Thermal Resources

The site will draw from ground heat with approximately 280 boreholes drilled to a depth of approximately 800 feet and drive efficiency through heat recovery methods between buildings with different heating/cooling demands. The geothermal source is expected to have a capacity of 1,625 tons of cooling and 25,731 kBtu/hr of heating.

Potential Configuration

The community heat pump system proposed for the campus will feature a Central Energy Plant (CEP), handling 100% of heating, cooling, and domestic hot water needs. The centralized design includes a prefabricated CEP mitigating costs and construction time, while ensuring quality control. The plant includes (4) 400-ton centrifugal chillers and (3) 250-ton screw chillers connected to the ground loop. There will also be (2) 400-ton cooling towers and (2) 810 kW electric boilers for additional resiliency. The heat pumps can fulfill differing building thermal demands through simultaneous heating and cooling.

The campus plans to install a microgrid, which will produce renewable electricity, optimize system efficiency, participate in demand response, and increase resiliency during grid outages. The microgrid includes a 3.2 MW solar photovoltaic array coupled with 10 MW-hr battery energy storage.