

**Arverne East
Category B Design Study
NYSERDA PON 4614**

Queens County

Technical Lead:
ZBF Geothermal



The Site & Beneficiaries

The Arverne East project is a new construction development located in Far Rockway, NYC. The development includes multifamily apartment buildings, townhouses, bungalows, retail and community facility space, a brewery, and a hotel. There are 1,650 dwelling units and almost two million square feet of conditioned space. Due to the large scale of this development, the project is anticipated to be constructed over the course of approximately seven phases between 2023 and 2029.

Potential Thermal Resources

The project includes a closed loop geothermal system with approximately 482 boreholes drilled to a depth of approximately 499 feet.

Potential Configuration

The system is an ambient loop design system with 5,500 linear feet of pipe. The ambient loop will be maintained at a temperature between 40°F and 70°F. The design of this project as a community geothermal system allows for load sharing at both the building and site level; the larger buildings remain in cooling mode for longer periods and share waste heat with the smaller buildings, which improves overall efficiency. The system will employ water-to-water heat pumps for domestic hot water and pool heating. Water-to-air heat pumps will be used for space conditioning.

The project incorporates other green design elements, such as passive house design standards, solar pv (estimated 12,400,000 kWh per year of electric generation), and the consideration of battery storage.