

**Wagner College**  
**Category A Feasibility Study**  
**NYSERDA PON 4614**

Richmond County

Technical Lead: Endurant  
Energy (formerly GI Energy)

Anticipated completion of  
study/availability of final  
report: October 2021



V1 6/2021

**The Site & Beneficiaries**

**Wagner College is an existing educational campus in Staten Island with 24 buildings.** An existing district hot water system is 55-years-old and in need of urgent replacement, the hot water is produced by a natural gas-fired Combined Heat and Power (CHP) system. A subset cluster of six buildings, collectively 440,000 square feet, will be analyzed to explore district-style heat pumps. These six buildings have diverse occupancy patterns and thermal load profiles, consisting of dormitories which are heating-dominant, and science buildings which are cooling-dominant. The analysis will quantify the peak of the composited thermal load and compare to the sum of the individual peaks in order to assess the load-flattening benefits of aggregating into a district.

**Potential Thermal Resources**

The primary opportunity anticipated will leverage heat recovery heat pumps to move heat from one building to another, and supplemental thermal resources, if needed, could include ground-coupled boreholes and/or sewage water.

**Potential Configuration**

Will explore 4G design, consisting of a central Thermal Building, which houses the heat pumps and from which hot water and chilled water will be distributed via conveyance pipes to the end-use buildings (simple radiators can be used in the end-use buildings). Benefits of this configuration include: opportunity to integrate with existing thermal infrastructure and use the heat pumps as the first-call (reserving the fossil fuel systems as supplement to meet extreme peaks or for systemwide redundancy for resilience); focusing the location where electric infrastructure upgrades are needed to meet the expanded electrification demand to occur at the Thermal Building (as opposed to at the end-use buildings) to minimize disruption to mission-focused activities during construction, and cost containment.