Silo City Category A Feasibility Study NYSERDA PON 4614

Erie County

Technical Lead: Endurant Energy (formerly GI Energy)

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





V1 6/2021

The Site & Beneficiaries

Silo City will be the gut rehab of existing buildings in Buffalo to yield a mixed-use complex with six buildings. The historic buildings, dating back more than one-hundred years, have been vacant for the past fifty years. These six buildings, collectively 785,000 square feet, will be analyzed to explore district-style heat pumps. The buildings will have diverse occupancy patterns and thermal load profiles consisting of multifamily-residential, performing artist sound stage, and hydroponic farming. The analysis will quantify the peak of the composited thermal load and compare it 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, river water from the abutting Buffalo River, air-source heat pumps, and/or sewage water.

Potential Configuration

Will explore 4G design, consisting of a central Thermal Building which that 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 other supplemental 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), the ability to focus 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.