

**Urban Villages, Syracuse
Category B Site Specific Design
Study
NYSERDA PON 4614**

Onondaga County

Technical Lead: Taitem Engineering

Anticipated completion of
study/availability of final report:
January 2023

Figure 1. Existing building structures



Figure 2. Wax tank for thermal storage



V1 5/2022

The Site & Beneficiaries

Urban Villages is a proposed redevelopment at the former site of the Will & Baumer Candle Factory in the outskirts of Syracuse, New York. The current site was at the time of its closing in 2010 was the oldest manufacturing facility in Central New York. Since 2010, the property has been sitting vacant. The proposed district will re-develop this abandoned industrial site through gut rehabilitation of the existing derelict buildings. The project plan calls for using the shells of eight existing industrial buildings, which will be repurposed to provide approximately 150 dwelling units, a multi-use recreational facility, datacenter, and a craft brewery with restaurant.

Potential Thermal Resource

A community-style heat pump approach makes sense for Urban Villages because it will leverage a unique feature of the site, several very large underground steel vats that were formerly used in the candlemaking process. The project proposes to keep the tank storage volume separate from the water sent to the ground heat exchanger (GHX), which enables the tank water to be used seasonally in different applications to provide efficient heating or cooling during the peak heating and cooling periods. With the anticipated load profiles of the planned development, the proposer hopes to be able to flatten the electrical load and enable otherwise unattainable cost and energy savings. In addition, the developer has arranged for tenants including a brewery and a datacenter that will help to offset the peak loads and reduce the overall size of the ground heat exchanger.

Projected Learnings

This project represents a very typical mix of upstate building types and development type in terms of size/scale. It continues to be important to demonstrate cold-weather performance of heat pumps in such a typical use and the ability to meet the domestic hot water needs of the buildings. Further, this project will demonstrate the feasibility of using a unique opportunistic resource, the existing underground vats, as thermal storage.