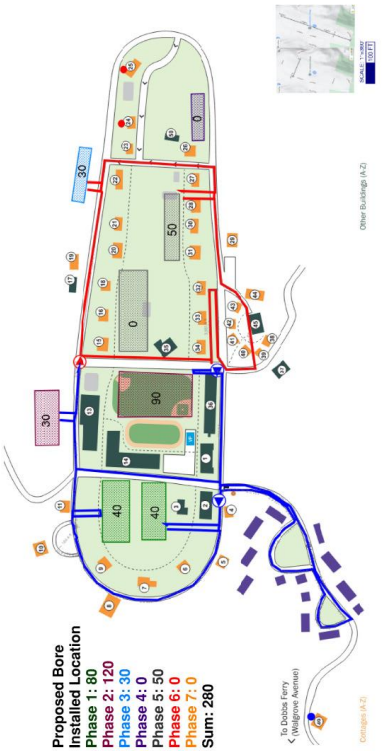
The Children's Village
Category B Site Specific Design Study
NYSERDA PON 4614

Westchester County

Technical Lead: MEP Geothermal Engineering

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



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The Site & Beneficiaries

MEP Geothermal Engineering, PLLC and affiliate Salas O'Brien along with Pro Architects will conduct the schematic design and design development phases of the community geothermal system for the Children's Village (TCV) located on a historic 180-acre campus in Dobbs Ferry, New York. This is a non-profit organization dedicated to work in partnership with families to help boys (six to 20 years of age) become educationally proficient, economically productive, and socially responsible members of their communities. The proposed community geothermal solution for The Children's Village will be a decentralized system with geo-exchangers in multiple locations around the campus to replace aging HVAC systems heated by fuel oil.

Potential Thermal Resource

After conducting a feasibility study, the mix of residential, academic, administrative, and recreational buildings provides the kind of load diversity that make community geothermal heat pump systems worthwhile. The thermal source and sink for the community geothermal system will be a decentralized network of six ground loop heat exchangers with 280 vertical bores that are each 500 ft deep. The current proposed geothermal system is sized to meet 100 percent of the peak heating and cooling loads of the aggregated thermal profile. The site can also take advantage of Solar PV systems and battery storage to provide reduction in high demand charges and system resiliency as an emergency backup supply to replace existing diesel generators.

Lessons Learned

The target audience of this study would be leadership teams that oversee a district of mixed-use buildings, such as universities, who can translate lessons learned from the proposed community geothermal project at The Children's Village campus to other campuses with diverse building uses and available greenspace for geothermal heat exchangers. Other lessons include how to make the most of a campus layout such as how a one-pipe ambient loop can utilize the multiple open fields on campus to reduce the necessary upfront infrastructure. Also finding ways to incorporate circuits within an ambient loop can help add system resilience and spread the upfront construction costs over a longer period of time.