

Delivering Ground Sourced Heating & Cooling Solutions in Dense Urban Areas using Energy Foundations

Energy foundation solutions can help revolutionize urban sustainability, propelling us towards a greener, electrified future. The US Inflation Reduction Act of 2022 has ushered ground source heat pump solutions to the forefront as indispensable tools for electrification and achieving carbon reduction commitments. Dense urban landscapes pose unique challenges, particularly where building footprints extend across entire sites. Despite these constraints, a spectrum of options exists; it's a matter of exploring alternative solutions. Installing geothermal loops into the very building's foundations connected to a ground source heat pump can deliver significant amount of base heating and cooling load and be complemented with air source heat pumps to deliver remaining demands, with minimal schedule impact and additional costs along with reduced CO2 emissions when compared to other geothermal solutions. This presentation discusses how energy foundations were successfully used on a commercial building as part of delivering an all-electric building in lower Manhattan, New York, provide invaluable lessons learned and guidance on future projects. Additionally, we will analyze the current performance of the system and evaluate the tangible impact of IRA tax credits on similar endeavors.