# Central at Garden City
# District Energy System Mini-Plant

The Central at Garden City District Energy System Mini-Plant is Phase 4 of the Alexandra District Energy Utility (ADEU), the largest ambient heating and cooling district energy system in North America. The mini-plant was developed to service a new 284,000 sq. ft. shopping mall, while also integrating with the main ADEU system.

The ADEU is the first district energy system in Canada to provide heating and cooling to large-format retail buildings using low-carbon air-source heat pump (ASHP) technology. Buildings at Central at Garden City can share energy through the central heating and cooling mini-plant. An energy transfer station links the mini-plant to the main ADEU system, allowing the ASHPs to either back-feed the entire Alexandra neighbourhood and share excess cooling energy or heat captured from the outside air with the larger neighbourhood, or recharge the geoexchange loop.

The ADEU mini-plant has an estimated 25-year life cycle. It is expected to eliminate 300 t $CO_2e$ per year.

Kerr Wood Leidal Associates designed and administered construction of this project for the City of Richmond.

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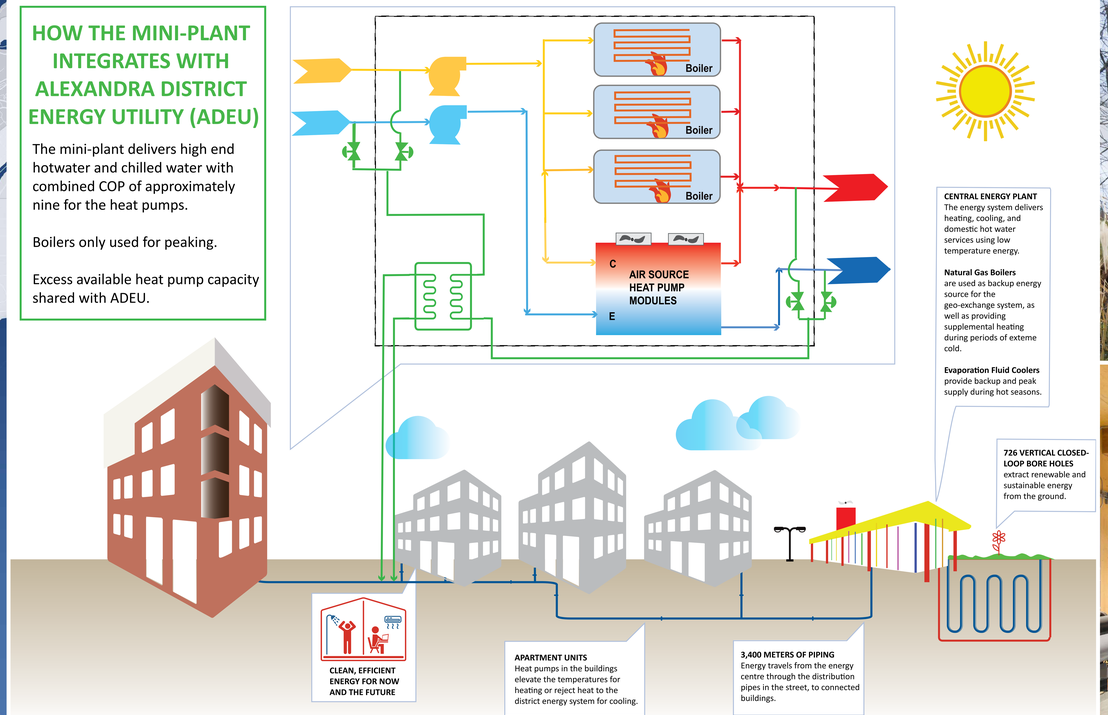
## HOW THE MINI-PLANT INTEGRATES WITH ALEXANDRA DISTRICT ENERGY UTILITY (ADEU)

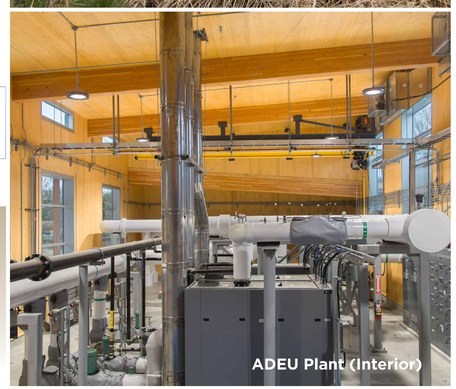
The mini-plant delivers high end hotwater and chilled water with combined COP of approximately nine for the heat pumps.

Boilers only used for peaking.

Excess available heat pump capacity shared with ADEU.



ADEU Plant (Exterior)


ADEU Plant (Interior)

Mini Plant Interior

Mini Plant Source Heat Pumps