NY-GEO 2023 Conference
April 26 & 27, 2023
Marriott Albany, New York

- 650+ Attendees
- 40 Sessions
- 45 Exhibitors

Join NY-GEO’s Let’s Talk on 9/22/2023 @ 3PM

John’s Trip to Colorado & Vancouver
DISTRICT ENERGY SYSTEM
HEATING AND COOLING USING A RECYCLED SOURCE OF THERMAL ENERGY — WASTEWATER

Denver, Colorado
District Energy – SHARC

Heating, Cooling & DHW for **Entire District**

Low-Temp/Ambient loop (70°F)
Each building uses heat pumps

**District Energy – SHARC**

**National Western Center**

- (2) SHARC 880 provide 3.8MW of thermal transfer
- 90% of total heating & cooling load for 1M sq ft of indoor space
- ~2600 mt CO₂e/yr offset
- Plans to expand plant to 10MW

[SHARC project highlight]

CUSTOMERS.sharcenergy.com
- SHARC Filter Unit
- Support Frames/Skids
- Control Panel
- Macerator/Grinder
- Piping/Valve Assembly
- Plate & Frame Heat Exchanger
  - Wide Gap
- Wastewater Holding Tank
- Solids Handling Lift Pumps
- Heat Pump(s)
Colorado Mesa University Living Lab

- ~ 10-year payback
- ~ $1.6 M per year energy savings
- ~ 7.9 MMt CO$_2$ per year reduction
- 100% of heating covered
- Water use cut by 60%
- Average COP of 5.7, peak 8.9
Stage 1 – building moves energy internally using building pumps.

Central Loop 50F to 85F

Stage 2 – building(s) move energy to or from the central loop.

Least Energy Path™

Stage 3 – Central Loop calls Borefield (hot or cold).

<50F or >85F

Stage 4 – Central Loop calls Boiler or Fluid Cooler (hot or cold).

<40F or >90F
Alexandra District Energy Utility – City of Richmond, BC

ADEU - Distribution Piping

- Two-pipe distribution system
- Transfers energy from the geo fields to the customer’s buildings
- Combines customer’s loads providing diversity benefit
- No additional insulation required
- More than 3.4 km of HDPE 22” mains and 8-12” service lines

***Link to Bylaws that include Rate Structure on Last Page***
ALEXANDRA DISTRICT ENERGY UTILITY BYLAW NO. 8641
PIRANHA paired with Geothermal
Simultaneous Heating + Cooling
District Energy – SHARC

***Take a Virtual Tour!***

- 22-acre mixed-use
- 1.3M sq ft indoor space
- 30,000 sq ft retail, including grocery
- 1,300 residences
- 15,000 sq ft community center

leləm’ living

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CUSTOMERS.sharcenergy.com
NEU currently serves 5 Million ft$^2$ of residential, commercial, and institutional space, planned expansion to 20 Million ft$^2$.

- 3.2 MW plant capacity output, planned expansion to 10MW.
- Qty-2 SHARC 880
2023-08-30 National Western Heat Recovery – Denver, CO
2023-08-31 NREL Workshop – Golden, CO
2023-09-01 Colorado Mesa University – Grand Junction, CO
2023-09-05 Alexandra District Energy Utility – Richmond BC
2023-09-06 SHARC Visits – Vancouver Area