

WASTEWATER HEAT RECOVERY - DISTRICT HEAT NETWORK SEATTLE, USA

Overview

Recirc Energy were engaged by a nationally recognised US construction company, to advise and review a Wastewater Heat Recovery scheme in Seattle, USA. Leading the design of a wastewater source heat pump system for an energy district; the company enlisted Recirc to peer-review and provide advice and lessons learned from its UK Wastewater Heat Recovery projects and operations.

The scheme, a first for the city, is abstracting wastewater from a nearby mains sewer and delivering heat to four residential and commercial buildings through a district heat network.

Key Recommendations

- Recommended removal of the auger screen from the design. Derived from lessons learned at our Borders College facility where there has been very low downtime.
- Removing the auger significantly reduces operational power consumption, maintenance cost, associated health and safety risks and project CAPEX. Recirc suggested these savings be reinvested into increased redundancy of the macerator by either increasing the capacity of the unit or adding an additional standby macerator unit.
- Recirc advised upstream maceration would completely remove pump downtime caused by blockages, from previous work, a 0.6" screen works well in removing the wipe debris causing possible blockages.



The client adopted all of Recirc's recommendations for design improvements in respect of the connection design, operation of the Wet Well, and system optimisation. Recirc's specific remit in this review included a peer review of the sewer connection design, wastewater handling, process design, constructability, operations and preventative maintenance.



Recirc provided very helpful and thorough feedback during our complex sewage heat recovery design process. Their expertise ranged from big picture to the very detailed and provided solid reassurance about our final design."

Brad Liljequist, Senior Program Manager.

Results

The company are now confident that the design moving forward to the 90% technical package is founded well with Recirc's advice. Recirc has made several recommendations as to what the design team may wish to consider when taking the design to the technical review package. This is to understand where the appropriate changes are being made in order to improve constructability, identify CAPEX and OPEX savings and design a system that is optimised in the current setting to provide the highest carbon and financial savings possible.