



ABOUT CORNELL UNIVERSITY



Located in Ithaca, NY, Cornell University is a prestigious Ivy League school spanning 2,300 acres.

The school is committed to reducing its environmental footprint while providing reliable, cost-effective energy and water to campus.



Cornell University

THE CHALLENGE

To provide students with the best residential and academic experience, Cornell University is expanding their North Campus. The North Campus Residential Expansion (NCRE) project will add an additional 2,000 beds and a new dining hall to the campus.

When deciding what heat exchangers to use to provide the new buildings and students with reliable hot water Cornell took many things into consideration including: size, maintenance, and efficiency.

"Some of our heat exchangers didn't last as long as they should. A problem with a lot of traditional [shell and tube] heat exchangers, is that they have way too big of a footprint," said Frank Perry, Thermal Distribution and Hydroplant Manager.

Maintaining massive shell and tube heat exchangers on campus had not been easy. Replacement tube bundles had a long lead time, 6-12 weeks. If a heat exchanger bundle were to fail without having a permanent backup system in place, a facility would remain without any available hot water until a new tube bundle is ordered, received, and installed. Waiting weeks or even months for a replacement could constitute a disaster in a college dorm building.

Once the replacement bundles came in, the job was time and labor intensive, often losing an entire day to the job. "To us having a plug and play kind of heat exchanger, is important" adds Frank Perry. Cornell needed a solution that would be compact and economical with minimal maintenance.



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FRANK PERRY, CORNELL UNIVERSITY

THE SOLUTION

Many heat exchanger options offered in the market are catalog units with little to no customization. Seeking the compact and high heat transfer design of the shell & coil heat exchanger and the ability to customize each heat exchanger to the specific applications proved challenging for Cornell. Until, they found Cooney Engineered Solutions' Thermo-Pack.



"What made the Thermo-Pack a good fit, was first the size. We want to be able to convert building steam laterals to hot water by putting these in a vault, with the controls in the building," stated Frank Perry. The vertical packaged skid was customized to easily fit within the restraints of the mechanical room.

Piping, materials, and accessories were also tailored to fit the specific application. The robust, welded stainless steel shell and coil design with convenient flanges will make for "quick-change" maintenance if needed in the future.

"The condensate sub-cooling and how cool we can get the condensate is great. We're getting more heat and that's a big factor with any kind of hot water conversion, to be more efficient."

On working with Cooney Engineered Solutions on the project Frank Perry added "Cooney Engineered Solutions worked with us and created what we wanted. And that is a big deal for us." With the installation of the Thermo-Packs on campus, Cornell now has reliable and efficient domestic and heating hot water with minimal maintenance.