

University of Connecticut

Energy Savings Performance Contract (ESPC)



Steam pipe upgrade during and after construction along Hillside Drive.

Founded in 1881, the University of Connecticut (UConn) ranks among the top 25* public universities in the United States. The university's current enrollment is more than 30,000 students. The main campus in Storrs, Connecticut is made up of a wide range of modern and historic buildings totaling over 8.5 million square feet of space.

UConn issued an RFP for an Energy Savings Performance Contract through the State's "Lead by Example" program, administered by the Connecticut Department of Energy and Environmental Protection.

A Request for Proposal (RFP) was open only to companies identified as Qualified Energy Service Providers (QESP) under State of Connecticut Contract 12PSX0153 for Energy Savings Performance Contract Services.

The university's project goals were threefold: reduce long-term greenhouse gas carbon emissions, upgrade aging and failing infrastructure and building systems, and mitigate escalating operating and maintenance costs.

The university selected Con Edison Solutions as their partner to manage and execute a complex, turnkey Energy Savings Performance Contract. The Con Edison Solutions team, with extensive expertise in higher education energy retrofit projects, performed facility and heating system energy audits, completed design engineering, provided comprehensive construction management services, and is providing ongoing measurement and verification services for the university.



PROJECT DATA

SIZE

850,000 sq. ft. across seven buildings:
Agriculture Bio-Technology Lab (ABL)
Agriculture Technology Lab (ATL)
Biology-Physics Lab
Chemistry Lab
Pharmacy-Biology Lab
Psychology Lab
Bio-Behavioral Annex Lab

CONSTRUCTION DATES

May 2016 to August 2018

PROJECT VALUE

\$24,300,536

FINANCING

Internally funded by client

ANNUAL SAVINGS

\$1,270,453/year in Energy and Operational Savings
68,868 MMBTU/year in Total Energy savings
68,812 MMBTU/year in Steam savings
1,627,190 kWh in Electricity savings
563 therms in Natural Gas savings
7,310,355 gallons in Water savings

Con Edison Solutions developed a comprehensive solution focused on upgrading infrastructure and reducing energy consumption for the Storrs Campus. The approved program included replacing more than 7,000 linear feet of deteriorated underground steam and condensate piping (high and low pressure); installing seven custom-designed steam vaults; installing variable air volume controls on laboratory fume hoods to reduce fan, heating, and cooling energy; upgrading lighting to

high-efficiency LED fixtures; improvements to building energy management control systems; recommissioning and repairing major HVAC and mechanical components; repairing and replacing defective steam traps; implementing building envelope improvements; and other innovative energy strategies.

Challenge

Upgrades to the university's Steam Distribution System were fundamental to revitalizing aging campus infrastructure and involved complex underground pipe installations. Specifically, this included significant trenching and excavation, demolition of nine underground steam vaults, and construction of seven new vaults, while working in an active campus environment.

This aspect of the project was especially challenging because the steam line replacement required excavating the central thoroughfare of the fully occupied campus. To minimize impacts on campus life, the Con Edison Solutions team carefully coordinated this phase of the project with the university so that it would be completed when the majority of students were on summer break. This phase used an integrated "Summer Slam" construction plan that enabled all work to occur between May and August.

After successfully completing this phase of work (valued at \$12 million), the Con Edison Solutions team received a letter of commendation from the University President.



PROJECT DATA

ENERGY CONSERVATION MEASURES/IMPROVEMENTS

- Underground steam piping
- Custom-designed underground steam vaults
- Variable air volume controls
- High-efficiency LED lighting
- Building energy management systems
- HVAC controls
- Mechanical components
- Steam traps
- Building shell upgrades



As of the date of this printing, the referenced project is the first and only project to be successfully implemented under the State of Connecticut's "Lead by Example" program, administered by the Connecticut Department of Energy and Environmental Protection (DEEP).