



## Impactful Infrastructure Upgrades at Jefferson in Philadelphia

### Customer Profile

Thomas Jefferson University (home of Sidney Kimmel Medical College) is a private research institution located in Philadelphia, Pennsylvania. The school's teaching hospital is Thomas Jefferson University Hospital, the flagship hospital of Jefferson Health. This medical center offers an extensive care network throughout Pennsylvania, New Jersey, and Delaware. These main campus buildings of both organizations cover 13 acres in Philadelphia's Center City district.

### The Challenge

Constellation was one of the first Energy Service Companies to work in tandem with Jefferson on a blueprint for achieving sustainable milestones. Jefferson's focus was — and remains — to reduce their environmental impact and help optimize energy expenses. Much time was spent identifying and developing multiple energy efficiency conservation measures across four million square feet of university and hospital buildings. Along with this, funding had to be coordinated from both institutions, and limited resources drove the project to be completed in phases.

### The Solution

Ultimately, Jefferson achieved significant sustainability objectives and goals through 11 phases of infrastructure and equipment upgrades for both university and hospital buildings. The ongoing teamwork and persistence allowed for a deeper relationship that proved to be a true work collaboration over many years.

“Jefferson is always keeping an eye out for a better way to do things and help save the environment. With energy expenses and energy equipment costs constantly changing, the time was right to install new equipment. The new initiatives focused on using the latest technology available and implementing it in the most cost-effective way...The funding of this new, energy-efficient equipment and technology is going to change our lighting, heating and cooling systems completely, causing them to run more resourcefully. We are making our buildings so much smarter than they have ever been in the past.”

– Randy Haines, Director of Energy Management,  
*Thomas Jefferson University*

Constellation provided innovative solution sets that included construction funding, third-party financing, and energy savings to backstop the debt service. Specifically, Constellation was able to quickly implement projects by utilizing its own capital to fund construction of the energy conservation measures. Jefferson then leveraged third-party financing to recapitalize the project. The flexible funding solution enabled Jefferson to start realizing energy savings while tapping the competitive market to keep financing costs low.

Today, energy management remains a vital role in the Jefferson Facilities Department. Following the completion of upgrades with Constellation, Jefferson has continued to use energy efficiently; utilize innovative technology; and provide energy security for the organization — short-term and long-range. They are committed to being eco-friendly and transparent in their efforts and impact, and Constellation is glad to be a part of their story.

### Project Highlights

- » Project Value: \$28.8M over 17 years (2000-17) with energy savings of \$5.4M.
- » Savings of more than \$132M in 17 years due to implementing energy saving measures and energy contracts.
- » More than \$2.4M of the \$132M was saved from 2004-17 with upgrades of lighting controls, steam-trap replacements, piping modifications, and smart metering.
- » Main Line Health (part of the Jefferson Health System with four acute care hospitals, one rehabilitative medicine facility, and others) was a separate project with a value of \$2.3M for upgrades to high efficiency lighting.
- » Methodist Hospital (part of the Jefferson Health System) was the initial energy efficiency project with Constellation. This project was a \$1M Energy Savings Performance Contract (ESPC) and Constellation provided turnkey services for five years for operation and maintenance of the chiller plant and all HVAC controls.

### Technical Highlights

- » Thomas Jefferson University and Affiliated Entities received Act 129 rebates.
- » Constellation worked with Jefferson via a collaborative, mutually agreed upon Master Energy Services Agreement (MESA) as one of the contracting solutions.
- » Energy conservation measures focused on efficiency, operations and equipment improvements, and reduction of utility costs

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