



CONTRACT DETAILS

Contract Type:

ENERGY SAVINGS PERFORMANCE CONTRACT
 ENERGY EFFICIENCY
 GUARANTEED ENERGY SAVINGS

Facility Size:

13 BUILDINGS
 4.9 MILLION SQUARE FEET

Energy Project Contract Value:

\$7,575,000.00

Annual Energy Savings:

\$ 1,410,805.00

SUMMARY

Located in center city Philadelphia, Thomas Jefferson University Hospital is a private health sciences university consisting of six colleges and schools. There were seventeen buildings evaluated through the energy efficiency assessment executed in preparation for this project.

The university buildings blanket approximately 2,000,000 square feet and consist primarily of offices, laboratories, and general occupancy areas. The hospital buildings contribute an additional 2,900,000 square feet to the project's overall footprint.



CUSTOMER BENEFITS

Thomas Jefferson University was confronted with several mounting issues in the months leading up to their energy efficiency project: rapidly growing enrollment, an aging infrastructure, and diminishing state returns, to name a few examples. TJU decided to partner with a national ESCO, and together they focused on reducing energy consumption campus-wide via a budget-neutral project.

Thomas Jefferson University is a medical teaching/research facility and a regional healthcare provider that serves the Philadelphia and Delaware Valley communities. When Aelux was given the opportunity to spearhead the lighting segment of the project, we understood that TJU's goals extended beyond the financially-driven. We agreed and committed to improving the quality of their most important spaces: laboratories, classrooms, medical offices, surgical suites, and patient rooms.

Through the Energy Savings Performance Contract (ESPC), TJU was able to increase the energy infrastructure capacity to accommodate campus growth, improve the reliability and control of campus energy consumption, and significantly cut energy, operational, and maintenance costs.

ENVIRONMENTAL BENEFITS

Thomas Jefferson University's partnership with the national ESCO yielded a project with benefits that extend beyond the involved parties. Through the execution of this project, TJU notably reduced its carbon footprint. The current configuration of energy consumption removes over **9,000 tons of CO₂**, which is the equivalent to planting over **40,000 trees annually** or turning off more than **18,000 (100W) light bulbs**. The advancement in campus sustainability and carbon reduction will have lasting effects on both Thomas Jefferson University and the city of Philadelphia.



SERVICES PROVIDED

The buildings surveyed were primarily equipped with linear T8 fluorescent lamps and normal power factor electronic ballasts, accounting for nearly 75% of the total lighting inventory. Limited pockets of linear T12 fluorescent lamps were also found. Compact fluorescent, metal halide, and incandescent lamps comprise the majority of the balance of existing lighting.

While the sheer volume of linear fluorescent lamps in use presented the opportunity to have a significant impact on the overall usage of university and hospital, other technologies provided the opportunity to reduce the usage of a single fixture by as much as 80%.

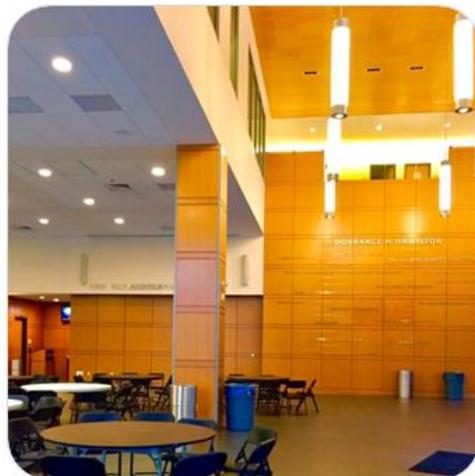
Beyond data, the goal of the audit is to inspect the current lighting technology while developing a strategic plan, tailored to deliver maximum benefit to TJU. The effort is exhaustive: and ranges from alleviating maintenance costs by specifying extra-long life LEDs to replace a hard-to-reach high bays to finding specific products that qualify for the greatest payout by an incentive program.

THE AUDIT PROCESS:

- INVENTORY EXISTING LIGHTING
- EVALUATE FIXTURE CONDITION
- DOCUMENT LUMEN OUTPUT
- LOG OCCUPANCY HOURS
(IN CORRELATION TO LIGHTS ON/OFF)

SERVICES PROVIDED (CONTINUED)

- Fixtures equipped with T8 or T12 fluorescent lamps were retrofitted with the most efficient T8 lamp and ballast combinations available, using low power factor ballasts whenever possible.
- High occupancy/load areas (i.e. areas that Aelux identified as logging the most time with lights on) received LED tubes in lieu of new T8s. This upgrade reduced the watts per fixture by roughly 60%. More than **30,000 Keystone LED tubes** were installed across the campus.
- Roughly 3,500 incandescent lamps, as well as the majority of CFL lamps, were replaced by low wattage LED alternatives. To illustrate the impact of this upgrade: a standard 60W incandescent can be replaced with an 8W LED alternative; the latter will provide comparable lumen output that remains consistent long after the former gradually dims and dies.
- A total of 60 fixtures deemed difficult to reach were replaced with LED fixtures in an effort to reduce or prevent future maintenance costs. The LED replacements are rated to last at least 5 years, maintaining the quality and level of light output for much longer than their predecessors.
- A combination of switch and ceiling-mounted sensors were installed in areas identified by Aelux as displaying a combination of high operating hours and a load of greater than 200W per room. More than 2,000 sensors are reducing energy consumption campus-wide.





ECONOMIC SUMMARY

	ECM Project Cost	Electric	Electric	O&M Savings Annually	Project Rebate	Total Savings Year 1	Simple Payback
	(USD)	(kW)	(kWh)	(USD)	(USD)	(USD)	(YRS)
University Buildings	\$ 4,067,589	550	6,432,089	\$ 111,424	\$ (291,691)	\$ 769,234	4.91
Hospital Buildings	\$ 3,506,945	597	5,147,981	\$ 90,848	\$ (358,213)	\$ 641,571	4.91
Total	\$ 7,574,534	1,147 kW	11,580,070 kWh	\$ 202,272	\$ (649,904)	\$ 1,410,805	4.91 years

ABOUT AELUX

Aelux was launched in 2006 with a vision to create the best model for connecting energy-efficient lighting technology to forward-thinking end users across all industries. Because we specialize in turnkey projects, we are deeply invested in each link of the retrofit value chain. The expertise we've developed by staying engaged at each step of the process allows us to custom-tailor each project to the client.

Our team is made up of professional auditors, project managers, lighting & control specialists, rebate administrators, financial analysts, and LEED/sustainability experts. We have completed thousands of energy-efficient lighting & controls upgrades across a myriad of facilities, ranging from hospitals and universities to industrial warehouses and hotels. We have also successfully implemented multi-phase portfolio rollouts comprised of branch locations of national chains.

Our sales team is certified by the National Council on Qualifications for the Lighting Professions (NCQLP). In order to maintain their lighting certification, they continue to pursue an education regarding the latest in lighting technology. They are a versatile team whose expertise includes a range of specialties: from guiding clients through the process of securing financing to creating photometric work-ups that will illustrate how a lighting upgrade will change the space it illuminates.

Our proposals are driven by our mission to show end users exactly how an energy efficient lighting project can impact the client, whether that impact will affect your bottom line, the status of the environment in your city, or how your business networks and operates.

*In 2015, Aelux was acquired by **WESCO Distribution, Inc.**, allowing Aelux to become a part of an organization with an international footprint. The acquisition allowed us to merge our compulsive attention to detail with the reach & wherewithal of one of the largest full-service electrical distributors in the world.*