



U.S. ARMY FORT KNOX

Fort Knox, Kentucky



\$2.3MM

Verified Annual Savings

118.2K MMBTU

Verified Annual Energy Savings

50MM GAL.

Annual Water Savings

At a glance

CEG Solutions implemented a \$58.1M ESPC at Fort Knox, retrofitting 400+ facilities, including classrooms, offices, data centers, warehouses, to cut energy and water use, improve comfort and resiliency, and generate millions in annual savings.

OVERVIEW

Fort Knox is home to more than 28,000 soldiers, employees, and family members. Despite \$200M+ in past energy projects, the base still faced opportunities to cut costs, improve comfort, and modernize critical systems. In 2019, OPM awarded CEG a \$58.1M ESPC to upgrade over 400 facilities, from single-room guard booths to large mission-critical operations. The challenge was to deliver aggressive savings and resiliency without disrupting base operations.

Project Highlights

- \$58.1M ESPC across 400+ facilities
- \$2.3M verified annual savings
- 118,223 MMBtu saved annually
- 50M gallons water saved annually
- PUE reduced from ~1.5 to ~1.2 at mission-critical data center
- \$11.1M in lifecycle O&M savings
- 90% fewer lighting service calls at HRC HQ



STRATEGIES

Energy & Operational Efficiency, Energy Audits, Financial Structuring, Performance Assurance, Performance Contracting, Resiliency



Awards

- 2020 DOE Federal Energy & Water Management Award
- 2020 AEE Region III Energy Project of the Year (Midwest)

Energy Conservation Measures

- HVAC & controls upgrades in 201 buildings
- Domestic water upgrades in 438 buildings
- LED retrofits (50,000+ fixtures interior; exterior in 147 buildings)
- Data center HVAC & controls modernization
- Ground-source heat pump improvements
- Variable speed pumping systems
- Retro-commissioning across multiple facilities

SOLUTIONS



CEG used advanced auditing tools, analyzing over 20M data points from 4,200 BAS control points and 150 loggers to identify retro-commissioning opportunities. Implemented ECMs included HVAC and controls upgrades in 201 buildings, LED retrofits in 280 buildings, domestic water upgrades in 438 facilities, variable speed pumping, and ground-source heat pump improvements. Mission-critical data center upgrades reduced PUE to ~ 1.2 , improved cooling efficiency, and enabled future IT consolidation, all while complying with Army design and cybersecurity standards.

RESULTS



The project is delivering \$2.3M in verified annual savings, with \$390K in first-year results and \$11.1M expected over the contract term. Energy use was reduced by 118,223 MMBtu and water use by 50M gallons annually. Service calls for lighting at the 900,000 SF Human Resources Command declined by 90%, improving workflow and reducing O&M costs. Data center upgrades reduced PUE from ~ 1.5 to ~ 1.2 , unlocking cooling capacity and resilience for long-term Army IT operations.

