

LUMEN

LUMEN TECHNOLOGIES CENTRAL OFFICE BUILDINGS
SEATTLE, WA

HVAC Upgrade & Building Management System Strategies

Goals & Challenges

Lumen Technologies has numerous central office buildings in the greater Seattle, Washington area that historically had hard-wired landlines and electronic switching equipment. When those landlines were replaced with modern cell phone and Voice over Internet Protocol (VoIP) technology, new high-density, electronic switching telecommunications equipment was required. As a result, Lumen Technologies needed to upgrade and replace Heating, Ventilation, and Air Conditioning (HVAC) components and Building Management System (BMS) strategies to match the dynamic carrier space loads inside the buildings.

In 2022, Willdan performed energy audits for 12 central office buildings and presented Lumen Technologies with a detailed report of the findings and a list of mechanical + controls recommendations to improve energy efficiency. Willdan also pursued Puget Sound Energy (PSE) incentives for each building in 2022 and 2023, and submitted detailed proposals and reports in February 2023 that included: mechanical and controls recommendations, modeled energy savings for each project, and high-level cost + payback per project.



Annual Energy Savings

2.5M kWh



Total PSE Cash Incentives

\$ 884,168



Average PUE Reduction

0.17



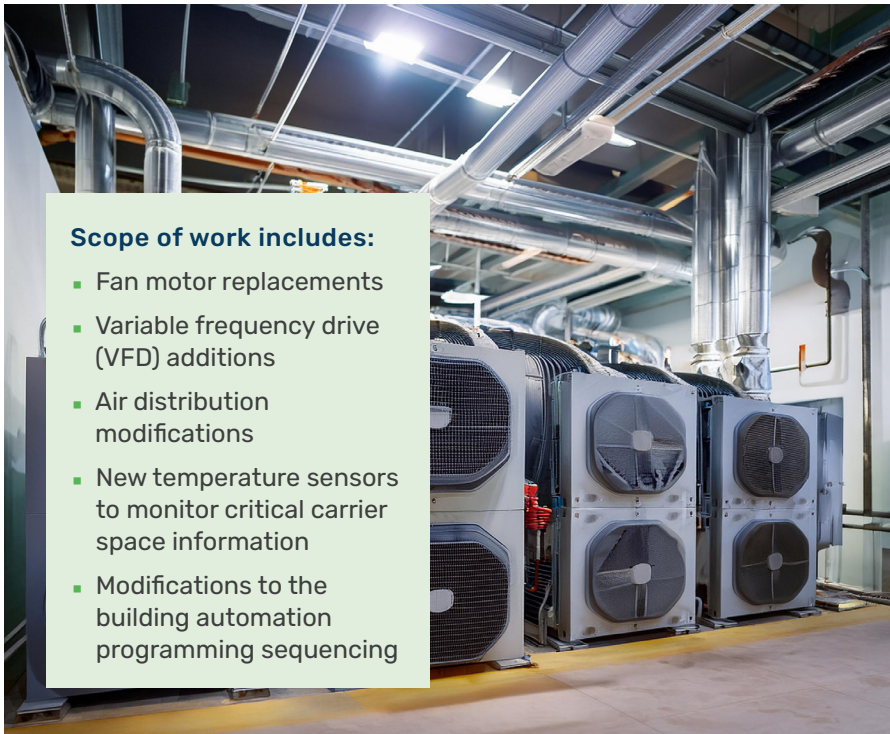
Average Project Payback

2 years



Solutions & Outcomes

In March 2023, Lumen Technologies issued purchase orders to move forward with projects at 11 buildings. Over the course of several months, Willdan worked with local mechanical and controls subcontractors to implement the energy efficiency measures for each project.



After implementation, Willdan completed Functional Performance Testing (FPT), as well as Trend Analysis Reporting (TAR) to trend critical BMS and mechanical points in each building to improve program sequencing and verification. Using utility 15-minute site interval data, Willdan calculated total energy savings for each project. The savings methodology and calculations were approved by PSE.

In Q1 2024, Willdan performed energy audits for 23 additional Lumen Technologies central office buildings located in Energy Trust of Oregon (ETO) territory. The utility incentive is \$0.45/kWh and will be a large factor in project approval.

About Lumen Technologies, Inc.

Lumen Technologies, Inc. is an American telecom company headquartered in Monroe, Louisiana, which offers communications, network services, security, cloud solutions, voice, and managed services. The company was a member of the Fortune 500 and the S&P 500 index from 1999 until 2023.

