



GLOBAL FACILITY SOLUTIONS

Energy and Engineering Services

Engineering Services Case Study

44 Montgomery Street, San Francisco

*In this historic San Francisco skyscraper, the controls for the HVAC system had fallen behind the times. The new ownership group managed by **Beacon Capital Partners** provided funding to enhance operations. Beacon Capital Partners turned to **Global Facility Solutions** to assist with the development and engineering of a complete Building Automation System upgrade.*

BACKGROUND

Located in San Francisco's financial district, 44 Montgomery Street is a 43-story office building. Designed by renowned architect John Graham, the grand building offers panoramic views from the Golden Gate to the Bay Bridge. When it was built in 1967, 44 Montgomery was the tallest building west of Dallas. The new property owner, an affiliate of **BEACON CAPITAL PARTNERS**, made significant infrastructure upgrades to the facility, enabling it to earn LEED EB GOLD-CERTIFICATION and ENERGY STAR CERTIFICATION.

OBJECTIVE

GLOBAL FACILITY SOLUTIONS provided engineering design, commissioning, construction management and consulting services for a two-phase control system and HVAC modernization project at 44 Montgomery. In order to bring the HVAC system up-to-date, GFS implemented a complete Building Automation System (BAS) upgrade that included all new controls, state-of-the-art network infrastructure, and an open-access front-end. The new BAS manages all HVAC systems, the central chiller plant, heating systems, tenant floor temperature controls and common area lighting via a high-speed fiber optic communications network throughout the building.

GFS provided all engineering services while developing the scope of work and managed the contractor bid phase for the new BMS and Direct Digital Control system. This upgrade included new HVAC control panels on tenant floors and new computer software and hardware for HVAC systems control. GFS provided construction management services and commissioning services for the project.



After the new automated system was installed in June 2018, GFS conducted an energy audit to identify Energy Conservation Measures (ECMs) and operational adjustments to improve overall facility energy efficiency. The recent upgrade of the BMS allowed a number of low cost operational changes to be made to the HVAC systems that resulted in significant energy savings and improved tenant comfort.

PROJECT VALUE & SAVINGS

The total BAS project cost was \$407,000, including \$41,500 in engineering fees for construction management, commissioning and the facility energy audit.

Total Cost of ECMs & BAS: \$450,000
Projected Annual Savings: \$126,000
Estimated Payback: 3.6 years

As a result of the audit, GFS recommended ECMs that would take advantage of one-time utility rebates and deliver ongoing annual cost savings. Operational changes and upgrades to the HVAC control system cost \$20,000 and provided projected annual cost savings of \$126,000. New lamps for stairwells, mechanical space and selected tenant space allowed the client to obtain a one-time utility rebate of nearly \$4,000. These lighting upgrades resulted in projected annual cost savings of \$4,200 with an estimated payback period of 2.5 years. GFS also advised that variable frequency drives (VFD) should be installed to reduce energy consumption and reduce wear and tear on motors, drives and belts, providing annual savings and reduced maintenance costs.