Retro-Commissioning Case Study
Workscape, Inc. Marlborough, MA

The Challenge

B2Q Associates, Inc. was retained by National Grid and Workscape to conduct an engineering analysis of the HVAC and control systems at the 72,000 square foot headquarters of this software development firm in Southborough, MA. Workscape was experiencing problems with their HVAC systems not meeting operational and occupant comfort needs and was looking to identify practical, cost-efficient steps to correct the problems. The goal was to pin point specific HVAC operating and control issues and provide recommendations to the company's mechanical contractor for retro-commissioning the system.

The Opportunity

The Workscape facility had 18 Carrier rooftop heating and cooling units with variable air and temperature systems utilizing a hierarchy of controllers to maintain ventilation, duct static pressure, and zone temperature set points. Each roof top unit and zone was evaluated by analyzing system trend data and comparing actual operation with expected performance. Results showed the need for retro-commissioning of the units due to problems, including malfunctioning economizer cycles, faulty operation of bypass duct dampers, compressor short-cycling, and humidity sensors out of calibration, to name a few.

The Results

B2Q indentified both low cost and capital improvements efficiency measures including retro-commissioning the building automation and HVAC systems installation of variable frequency drives on supply fans, and lighting upgrades with estimated savings of more than 285,000 kWh's and 5,000 therms annually.