

CASE STUDY



How a Top-Tier Medical  
Research University  
**REDUCED ENERGY  
COSTS BY 22%**  
with Building Automation

One of New York City's top-tier medical research universities needed to reduce energy costs and consumption as much as possible while remaining compliant with codes and regulations. They reached out to Enica Engineering to guide them through this process.

**The Enica team reduced their airflow and reprogrammed their entire building, reducing annual energy costs by at least 22%.**

## The Problem

The university lab's high energy cost per square foot, low energy score, and impending penalties made it necessary to reduce energy usage and costs as much as possible.

## The Solution

Most research labs are required to have a certain number of Air Changes per Hour (ACH). These high ACH environments require a significant amount of energy to move and condition the air. Because codes and standards allow for reduced airflow in unoccupied spaces, installing occupancy sensors and programming the air handling units (AHUs) for reduced airflow was the key to reducing energy consumption.

## As Part of Enica Engineering's Solution, They:

1

**Installed 230 new occupancy sensors** to provide real-time conditioning setbacks

2

**Installed and tested custom setback control programming** for 9 AHUs and 100 supply and exhaust lab air valves

3

**Calculated reduced airflow requirements** based on a pressurization cascade

4

**Calibrated all the airflow boxes**

5

**Pressure tested spaces** to ensure differential pressure met requirements

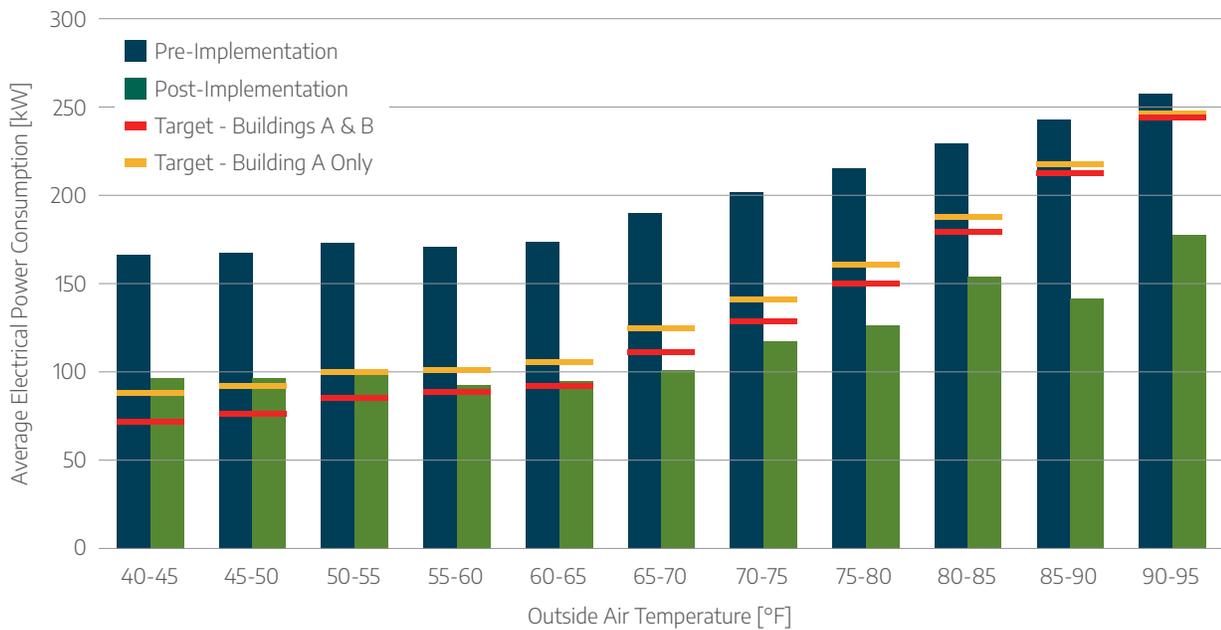
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**Re-wrote and installed integrated AHU and airflow box programming**

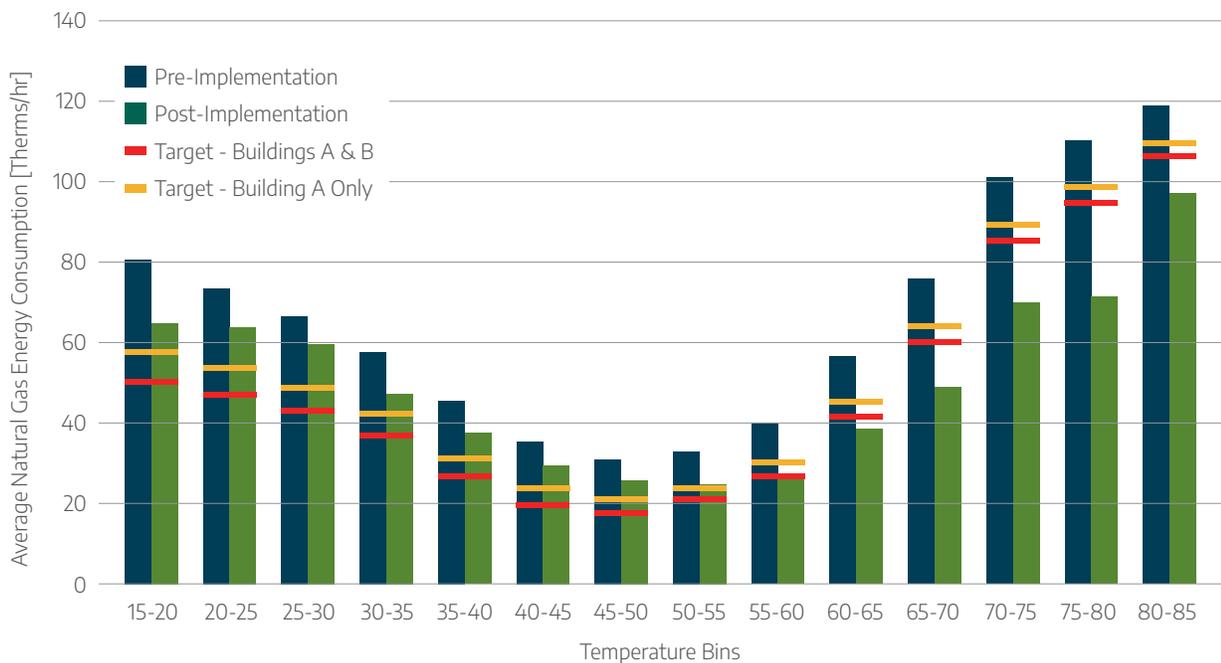
## The Results

- Improved reliability
- Increased predictability
- Reduced the building's annual energy cost by at least 22%
- Improved system operation
- Saved \$237,341 annually in energy and avoided penalties
- Payback achieved in 1.217 years
- Saved 679,039 kWh of electrical energy per year
- Saved 142,546 (+/- 5,700) therms of natural gas per year

Average Electrical Power Consumption<sup>1</sup> per Outside Air Temperature Range



Average Natural Gas Energy Consumption<sup>2</sup> per Outside Air Temperature Range



1. Electrical power consumption per insight trend data. 2. Natural gas energy consumption per steam meter data.

## About Enica Engineering

Enica specializes in reinventing today's broken building automation project delivery methods and has found a practical way to improve operations, increase energy savings, and streamline capital projects. Enica is a NEBB-certified engineering firm focused on building automation, which means they can certify results as well as infrastructure performance. They are also a top 10% ConEd C&I firm for total energy saved.

As experts in building automation systems and the systems they automate, Enica Engineering is uniquely capable of reducing energy consumption for their clients. Contact them today to learn more.

