ELARA ENGINEERING

Big Picture Thinking. Practical Approach. Sustainable Design.

NU Francis Searle Building

Project Highlights and Results

- As part of a 10-building energy audit, Elara identified $733,500 in annual energy savings opportunities for this building, including a reduction of annual electricity consumption by 51% and a reduction of annual steam consumption by 48%, actual savings exceeded this projection
- Implementation of selected recommendation retrofitted approximately 400 constant air volume boxes to variable air volume boxes

Project Background

Owner:	**Northwestern University (NU)**
Location:	**Evanston, IL (Evanston Campus)**
Team/Team Lead:	**Don McLauchlan, Matt Swanson, Chad Von Holten**
Elara Role:	**ME + Controls Engineer**
Type:	**Energy Retrofit**
Construction Cost:	**$2,000,000**

Project Overview

Building Type:	**Higher Education, Laboratory**
Building Attributes:	**3-Stories; 144,220 SF**
Initial Construction:	**1970**
MEPFPIT Systems:	**VAV AHUs w/ Modified VAV Dampers & Smart CO_2 Control**

Innovation

- This laboratory building houses the Communications Disorders Department for Northwestern University's Evanston Campus.
- As part of Elara's design and project scope derived from its energy audit and recommendation, completed final functional testing of approximately 400 constant air volume boxes that were retrofitted to variable air volume.
  - Reduced design airflow levels to industry standards and minimum allowed by current applicable codes
  - Reuse or removal of existing reheat coils
  - Three-way control valves replaced with two-way control valves
  - New DDC thermostats to sequence VAV dampers and control valves
  - New VFDs and CO_2 Control for existing AHUs
  - Space and system scheduling implemented