

## LUC Cudahy Library

### Project Highlights and Results

- Converted building from costly electric resistance heating to hot water heating fed by the campus hot water plant
- Replaced aged and noisy AHUs that provided insufficient humidity control with consolidated VAV and heat pump systems
- Installed new state-of-the-art direct digital control building automation system tied to the campus network
- Upgraded main electrical panel and fire alarm system

### Project Background

<b>Owner:</b>	Loyola University Chicago (Lake Shore Campus)
<b>Location:</b>	Chicago, IL
<b>Team/Team Lead:</b>	Don McLauchlan, Adam Sanders, Mark Rockwood, Shawn Campbell, Nathan Sudnick
<b>Elara Role:</b>	MEP Design Engineer
<b>Type:</b>	MEP Energy Retrofit
<b>Construction Cost:</b>	\$4,600,000

### Project Overview

<b>Building Type:</b>	Higher Education; Library
<b>Building Attributes:</b>	3 Stories (plus basement); 129,000 SF
<b>Initial Construction:</b>	1920s, 1960s Basement and 2-Story Addition
<b>MEPPFIT Systems:</b>	VAV AHUs, Heat Recovery, Heat Pump System, Waterside Economizer, Campus HW/CHW, DDC

### Innovation

- Eliminated electric resistance coils for heating that were expensive to operate.
- Replaced and consolidated the existing AHUs (which had ongoing noise and humidity control issues) with new custom equipment inclusive of heat recovery. This included the installation of new fan powered boxes with hot water reheat coils that were also designed to circulate chilled water during cooling to act, in essence; as active chilled beams.
- Installed a new heat pump system with a fluid cooler for the book stack area and waterside economizer for the fan powered boxes via a heat exchanger.
- Replaced the existing pneumatic control system with a new state-of-the-art Direct Digital Control (DDC) system.
- Upgraded the main electrical panel and fire alarm system in addition to electrical infrastructure modifications to support the new and upgraded mechanical systems.

