

# UIC SCIENCE & ENGINEERING

### Impact at a Glance

- **20% energy reduction** from baseline achieved in 2016
- **25% energy reduction**, increased performance and comfort in 365 laboratory fume hoods
- **43.3% reduction of carbon emissions** in 2016 compared to 2011 at Building 619 (data via ENERGY STAR Portfolio Manager)

### Building Stats

- **Year Built:** 1963/1968
- **Neighborhood:** Near West Side
- **Architect:** SOM
- **Use:** Higher Education
- **Square Footage:** 1,200,000 in total

*The Science & Engineering Buildings at the University of Illinois Chicago* consists of four buildings totaling 1.2 million square feet. In 2012, a Request for Proposals was issued by the school for the renovation of the HVAC system serving all of the science and engineering facilities. The firm, Ameresco won the RFP with a guaranteed energy savings plan that specified a savings of \$1.8 million per year. UIC also joined the Alliance to Retrofit Chicago Higher Education (ARCH) in the fall of 2012.

UIC joined the Retrofit Chicago Energy Challenge in 2014 and reached their goal of 20% energy usage reduction in 2016.

### Spotlight on Energy Efficiency Investments



- Lighting retrofits: LEDs where possible, much of the lighting was switched from T-12 fluorescents to T-8
- Replacement of a high temperature absorption chiller with a 500-ton York unit with magnetic bearings
- Fume hood lighting retrofits and conversion from pneumatic control system to direct digital control
- Weather stripping and caulking around doors and windows.
- Heat recovery systems that preheated air at each AHU
- Smaller humidifiers installed to replace humidification from district system
- Static pressure sensors replaced with modern systems



*The Science and Engineering Laboratories Complex contains the laboratories, classrooms, and offices dedicated to research and education in physics, earth and environmental sciences, chemistry, biological sciences, engineering and computer science.*

In 2012, UIC initiated a transformation of the Science and Engineering Laboratories Complex to dramatically reduce energy costs from the 1960s era buildings. The buildings were built in the Brutalist form of architecture, featuring little ornamentation, but unique geometry and use of masonry and concrete. One of the buildings in the complex, 619 SES is one of a few Field Theory buildings ever built.

The retrofit within the complex had unique complicating factors. Research projects for the various engineering and science departments could not be interrupted during any portion of the project. Additionally, students and faculty could not be interrupted by any work and must be protected from any potential work.

Completing this project had **benefits beyond energy savings**. The retrofit aligned with the City of Chicago's Sustainable Chicago 2015 Action Agenda, and Retrofit Chicago's targeted 20% reduction, and UIC's Climate Action Implementation Plan. The International Union of Operating Engineers Local 399 provided a training program to assist in the education and operation of the new equipment. UIC engineers were engaged and ready to support the successes of the retrofit.

### **About Retrofit Chicago**

The Retrofit Chicago Energy Challenge encourages, promotes, and celebrates voluntary energy efficiency leadership. Together, participating building owners, facility managers, engineers, and policymakers are demonstrating that energy efficiency is a winning proposition for Chicago's real estate industry as well as the environment.



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### **The Key to Success**

*for UIC Science & Engineering*

“ Projects like this yield **cost savings**, improve indoor **comfort** and lab **safety**, and are measurable steps toward UIC's commitment to Zero-Carbon by 2050”

#### **Andy Mitchell**

*Assistant Vice Chancellor and Director of Sustainability, UIC*

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*The unique shape of the Science and Engineering South building is attributed to alter Netsch and the use of the Field Theory design model.*