

474 North Lake Shore Drive Condominiums

ASHRAE Excellence in Engineering Award
Chapter Level

Project Highlights and Results

- 61-story condominium buildings with 505 units, a multi-level parking garage, and residential amenity spaces.
- Proactive energy efficiency improvements reduced relative energy costs by 33% since 2007 for annual savings of \$184,572.
- Obtained \$110,000 in utility incentive funding.
- VFDs and improved system controls reduced building system loads; allowing for the installation of smaller new chillers to further lower initial and ongoing operating costs.
- In 2014, 474 N. LSD had an Energy Star Score of 56 and carbon emissions of 4,935 Metric Tons of CO₂e. Based on the 2023 data, the building's Energy Star Score is 91 with a carbon emissions of 2,926 Metric Tons of CO₂e which represents a reduction of 41%



Project Background

Owner: 474 North Lake Shore Drive Condominium Association
Location: Chicago, IL
Team/Team Lead: Matthew Swanson, Bhupendra Tailor, Chad Von Holton, Kelsey Dale, Dustin Langille, Abby Moody, Trevor Goselin
Elara Role: MEPFP Engineer
Type: Energy Audit, Retrofit
Construction Cost: \$2,900,000



Project Overview

Building Type: Residential
Building Attributes: 61-Story Condominium (800,000 SF; 558,000 SF Residential, 242,000 SF Parking Garage, Amenities)
Initial Construction: 1991
MEFPFIT Systems: Chilled Water Plant, Pool Air Handling Unit, Office/Fitness Center Variable Air Handling Unit, Domestic Hot Water Plant, Domestic Triplex Booster Pump System, Boiler Replacement, Corridor MAUs

Innovation

- Proactive approach implementing recommended energy efficiency improvement projects from Elara's 2008, 2011, and 2015 energy audits lowered energy use and costs to allow the building owner to invest further in energy efficiency and other beautification projects to increase the overall value of the building.
- The following table shows normalized natural gas/electricity consumption for the building in 2007 prior to the initial energy audit, and subsequent years after energy efficiency projects were initiated.

Year	Electricity		Natural Gas		Cost	
	Consumption (kWh)	% Change from 2007	Consumption (therms)	% Change from 2007	\$	% Change from 2007
2007	4,225,611	--	329,868	--	\$561,090	--
2009	3,831,922	-9%	338,717	3%	\$536,949	-7%
2013-2014	3,188,442	-25%	307,989	-7%	\$465,370	-17%
2018	2,756,500	-35%	293,822	-11%	\$433,170	-23%
2023	2,460,660	-42%	200,695	-39%	\$376,518	-33%