



Two 500 ton water cooled chillers in a series-counterflow configuration (63rd floor mechanical room).

340 On The Park Condominium Association Chilled Water Plant Conversion

340 On The Park, a 62-story, multi-family high rise building in Chicago's East Loop, believed the costs associated with their district cooling service were greater than the costs for a comparable 1,000 ton chiller plant.

After some preliminary analysis, Cyclone Energy Group was retained to perform a detailed costs analysis, which included energy modeling utilizing different chiller types, cooling towers, pump flow configurations, and control sequences.

This analysis indicated that the building could reduce their annual operating costs by just under \$500k, yielding a payback in less than 10 years.

Cyclone led the RFP to select a design build contractor to execute this project turnkey. The project was awarded to Hill Mechanical Group. It was commissioned in August, 2016.

This project includes the following unique attributes that were incorporated by Hill into their design:

- Two 500 ton premium efficiency screw water cooled chillers in a series-counterflow configuration.
- A built up slab sound attenuation system in the 63rd floor mechanical to ensure quiet operation for the penthouse unit below.
- A helicopter pick to lift the chillers from the ground and place them on the 63rd floor through a temporary roof opening (see picture above).
- Variable speed chilled water pumps.
- Variable speed condenser water pumps.
- Two 5-cell cooling towers with variable speed fans.
- Economizer heat exchanger for free chilled water during mild ambient conditions.
- Chiller efficiency at 100%:
 - Chiller 1: 0.564 kW/ton at 54CH EWT/48CH LWT and 89.7 CW EWT/94.3 CW LWT.
 - Chiller 2: 0.581 kW/ton at 48CH EWT/42CH LWT and 85.0 CW EWT/89.7 CW LWT.
- Chiller efficiency at 50%:
 - Chiller 1: 0.269 kW/ton at 54CH EWT/48CH LWT and 67.0 CW EWT/69.0 CW LWT.
 - Chiller 2: 0.300 kW/ton at 48CH EWT/42CH LWT and 65.0 CW EWT/67.0 CW LWT.

Location

**340 E. Randolph,
Chicago, IL**

Building Type

Residential

Size

995,446 Sqft.

**Lieberman
Management
Services**

Property Manager

**Cyclone Energy
Group**

Design Concept
Energy Modeling
Project Management
Commissioning
Energy Monitoring

**Hill Mechanical
Group**

Design Engineer
Contractor