

## CASE STUDY | Bernardin Manor



**B**ernardin Manor is an assisted living facility in Chicago. Armstrong approached the building managers with a proposal to upgrade existing constant speed pumps with new Design Envelope Tango pumps.

**74%**

The three new, properly sized, Design Envelope Tango pumps are operating much more efficiently than the original pumps. Energy savings from the pump retrofit will be over \$4,000 per year.



**FACILITY TYPE**  
Assisted Living Facility



**LOCATION**  
Calumet, Illinois



**SIZE**  
180 apartment units

### SITE CHALLENGES

Scheduling and execution to finalize the retrofit project before the start of the heating season



### ANNUAL ENERGY COST

BEFORE

**\$5,872**  
USD

AVERAGE

AFTER

**\$1,547**  
USD

AVERAGE

ANNUAL COST SAVINGS

**\$4,325**  
USD



### CO<sub>2</sub> EMISSIONS

BEFORE

**25,437**  
kg CO<sub>2</sub>

AVERAGE

AFTER

**6,701**  
kg CO<sub>2</sub>

AVERAGE

ANNUAL CO<sub>2</sub> EMISSION REDUCTION

**18,735**  
kg CO<sub>2</sub>



TO GET YOUR ENERGY UPGRADE PROJECT STARTED, CALL:

**ANNUAL  
ENERGY  
SAVINGS**

<b>ANNUAL kWh</b>	<b>TOTAL kWh BEFORE</b>	<b>TOTAL kWh AFTER</b>
3 chiller water pumps	58,718	15,469

**ANNUAL  
ENERGY  
SAVINGS**



**74%**

## KEY OUTCOMES:

- ✓ Over \$4,000 in energy savings annually
- ✓ Versatility of the pump control to accommodate HVAC system demand
- ✓ Energy savings and reduced CO<sub>2</sub> emissions
- ✓ Easy access to pump operating data showing flow, head, power usage and RPM
- ✓ Constant data-logging and performance monitoring

**Equipment included** 3 × Design Envelope Tango pumps

- Site specification** 180 apartment units  
3 PUMPS REQUIRED TO SERVE:
- Boiler
  - Secondary AHU
  - Radiant Heaters



Armstrong's DEMC technology maps each individual pump's hydraulic, motor and inverter variations at the factory, to achieve exceptional accuracy throughout the flow range. With this calibration, Armstrong Design Envelope pumps also serve as flow meters, providing reliable system flow data (+/- 5%). The testing ensures optimal performance efficiency at start-up, and Armstrong's Pump Manager helps maintain and extend efficiency throughout the pump's operating life.

**DESIGN  
ENVELOPE**

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SUPERSEDES: 9,569

SUPERSEDES DATE: FEB. 2019